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Surface Water Data at Los Alamos National Laboratory, Water Year 2020

N3B Los Alamos

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INTRODUCTION

The annual surface water data report from Newport News Nuclear BWXT-Los Alamos, LLC (N3B), contains flow data from 36 stream gaging stations and precipitation data from the extended network and meteorological observation stations that cover most of Los Alamos National Laboratory's (LANL's) property (Figure 1) and is for water year (WY) 2020 from October 1, 2019, to September 30, 2020. Data are collected from LANL's upper boundary, approximated by NM 501, to the lower boundary, approximated by NM 4. Gaging station data are used to support the monitoring of Los Alamos/ Pueblo Canyons under the June 2016 Compliance Order on Consent (Consent Order), the Buckman Direct Diversion Early Notification System, monitoring of upper Sandia Canyon for wetland stabilization, and LANL's Environmental Surveillance Program. Precipitation gaging station data support all the programs that the stream discharge gaging stations support as well as the Multi-Sector General Permit and the NPDES Individual Permit for Storm Water Discharge from Solid Waste Management Units and Areas of Concern (NM0030759).

The 2020 monitoring year was affected by the COVID-19 pandemic. The U.S. Department of Energy Environmental Management Los Alamos Field Office transitioned to essential mission critical activities status on March 24, 2020. Fieldwork was limited to only the activities necessary to ensure the safety of the public, the workers, and the environment. All gaging stations were remotely monitored via radio telemetry while field activities were limited. Field operations resumed in June and July 2020.

Los Alamos, New Mexico, has a semiarid climate with an average rainfall of about 19 in. per year. Ponderosa pine stands are primarily at higher elevations that transition to piñon-juniper woodlands as elevation decreases. The Pajarito Plateau is separated into fingerlike mesas by west-to-east-oriented canyons. The majority of the stream discharge gaging stations are located within ephemeral streams. These streams flow briefly in response to precipitation that occurs in the surrounding area or snowmelt runoff from higher elevations. The remainder of the year, the streams are dry with no flow. Perennial springs are present on the flanks of the Jemez Mountains and supply base flow to the upper reaches of some canyons, but the volume of flow is insufficient to maintain surface flows across the plateau mostly because of losses in stream channel transmission. The remainder of the stream gaging stations are located in either intermittent or perennial streams.

Qualifiers

Raw data are qualified using a standard set of letters to better determine the quality of the data. Qualifiers are noted within the daily peak discharge tables with a letter or letters. Unless otherwise noted, the data are qualified as good continuous records. Some of the data were reliably estimated. Data are reliably estimated during short periods of time using precipitation data to verify no precipitation and/or, when applicable, upstream or downstream stream-gage data.

Qualifier Description	Qualifier	Comments
Missing data	M	Data were missing for an unknown or inexplicable reason.
Ice	I	Ice or snow was present in the channel.
Testing	T	Field crews were present on-site and tested the equipment.
Equipment malfunction	E	Equipment failure occurred or equipment was rendered inoperable by high-flow event.

Qualifier Description	Qualifier	Comments
Inactive	IA	The gaging station was inactive because of an event that damaged the station beyond immediate repair or during the winter seasonal shutdown of precipitation gaging stations.
Snow	S	Precipitation as snow.

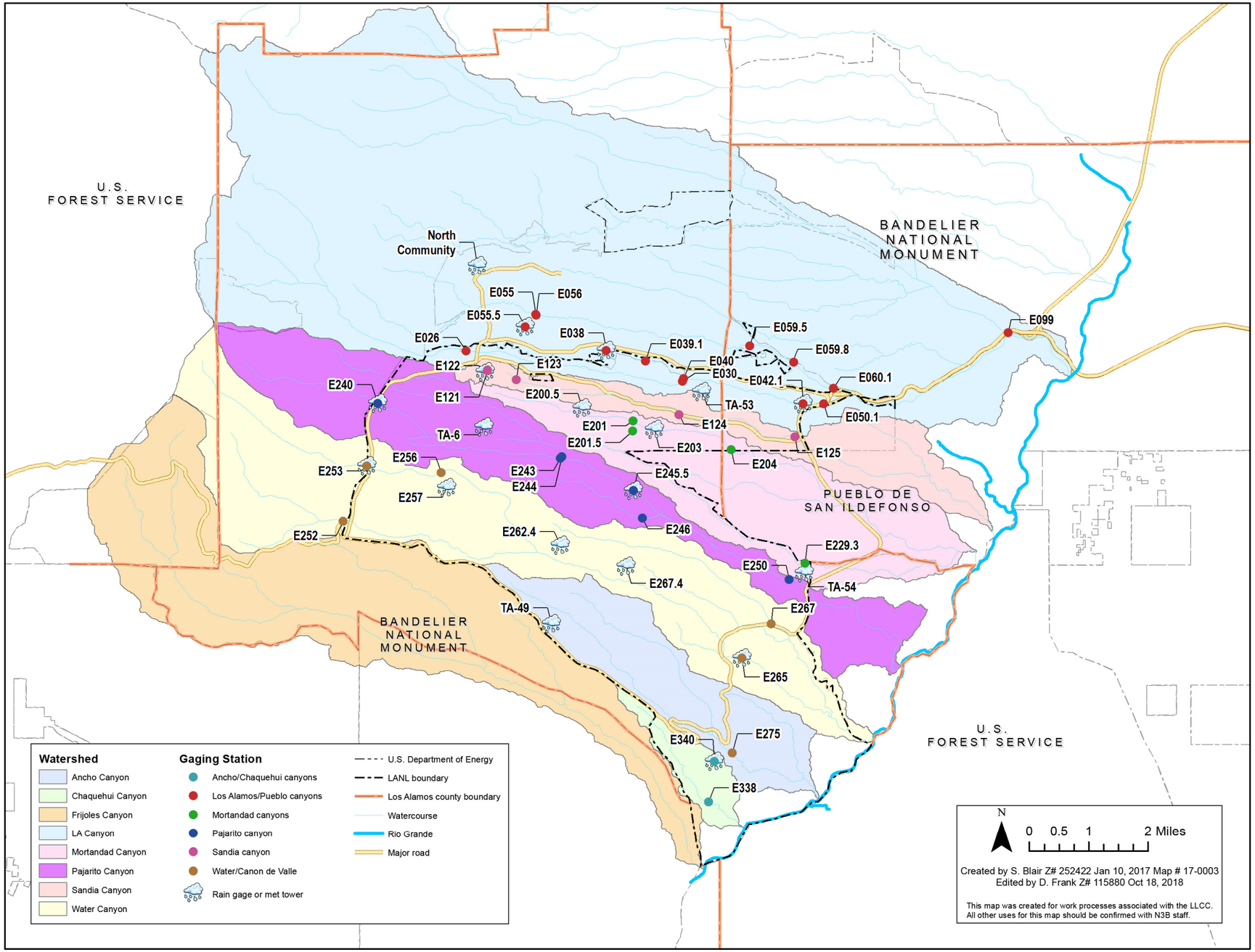


Figure 1 Location of watersheds, canyons, streams, stream gaging stations, and precipitation gaging stations on and adjacent to (or near) LANL property

STREAM DISCHARGE GAGING STATIONS

Station Identification Numbers

This report adheres to the USGS convention of downstream order system. The U.S. Geological Survey (USGS), Water Resources Division, assigns a unique identification number to each stream gaging station it establishes. All sites numbered since 1950 are part of the downstream order system. Because of the proximity of stations in this network, the first five digits of all station numbers are 08313. This five-digit number string is replaced with the letter E in the station number as an abbreviation. In this report, the station numbers increase from upstream to downstream.

Data Collection and Computation

A complete record at a gaging station includes stage and discharge measurements from a stream or channel, directly observed factors that affect the stage/discharge relationship, and weather records. Integrated 5-min records of stage were provided from a data logger or direct readings were collected and verified on-site. The 36 streamflow gaging stations record stage measurements every 5 minutes year-round, and the 14 precipitation gaging stations record rainfall totals every 5 minutes from April 1 to November 30. Precipitation stations are shut down during winter months to prevent damage to the equipment and LANL's five meteorological towers are used to determine snowfall totals. Data are collected from LANL's upper boundary, approximated by NM 501, to the lower boundary, approximated by NM 4. The streamflow gaging stations are inspected every 30 days from April to November and every 45 days from December to March; the two streamflow gaging stations that are part of the Buckman Direct Diversion Early Notification System in Los Alamos and Pueblo Canyons are inspected weekly; the precipitation gaging stations are inspected biweekly during the monitoring season. The standard operating procedure (SOP), N3B-SOP-ER-4003, "Operation and Maintenance of Gaging Stations for Storm Water Projects" (N3B 2020), is used for operating and maintaining the streamflow gaging stations. This SOP was developed using methods adopted from the USGS "Stage Measurement at Gaging Stations," Book 3, Chapter 7, Section A (Sauer and Turnipseed 2010). Records of all field activities associated with the operation and maintenance of the LANL gaging stations are stored in Maintenance Connection, a work order database. The guidance, N3B-GDE-ER-4012, "Maintenance Connection Everywhere Application for Surface Water Programs Data Collection" (N3B 2019) and N3B-DI-ER-4006, "Desk Instruction for Generating Work Orders in Maintenance Connection" (N3B 2020), regulates the development, issuance, and record collection of work orders.

Discharge is measured using meters and methods adopted by the USGS. The methods can be found in the USGS "Techniques of Water-Resources Investigations," Book 3, Chapter A6 (Carter and Davidian 1968), and the USGS "Water Supply Paper 2175" (Rantz 1982).

Rating curves were developed using the stage-discharge relationship curve determined from channel surveys, hydraulic modeling using the Army Corps of Engineer's HEC-RAS hydraulic modeling software, and from direct stage and discharge measurements. When it is necessary to define the discharge extremes outside the range for current meter measurements, the curve is extended using logarithmic plotting; velocity area studies; results of indirect measurements of peak discharge, such as slope area or contracted opening measurements, and computations of flow over dams or weirs; or step-backwater techniques.

Daily peak discharge is computed by applying daily peak gage height (stage) to the stage discharge curves or tables. If the stage-discharge relationship is subject to change because of frequent or continual change in the physical features that form the control, the daily peak discharge is computed by the shifting-control method. In the shifting-control method, correction factors based on individual discharge

measurements and notes by personnel taking the measurements are applied to the gage heights before discharges are determined from the curves or tables. Occasionally, during high-magnitude events, the gaging equipment will not capture the peak gage height. In such cases, when a visual high-water mark has been observed, the peak gage height is estimated.

The shifting-control method is also used if the stage-discharge relationship for a station is temporarily changed by natural vegetation, aggradation and degradation or debris, and sediment accumulation on the control. At some canyon bottom, northern, and perennial stream gaging stations, the stage-discharge relationship is affected by ice in the winter and it is not possible to compute discharge. Temperature data, precipitation data, and discharge records from nearby stations are used to estimate discharge during these periods.

For some gaging stations, periods occur when no gage height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This occurs when the data logger stops recording or otherwise fails to operate properly. For such periods, the daily discharge is estimated on the basis of recorded range-in-stage, previous and subsequent records, discharge measurements, weather records, and record comparisons made against other stations in the same or nearby basins.

Accuracy of Records

The following two factors determine the accuracy of stream discharge records:

- Stability of the stage-discharge relationship or, if the control is unstable, the frequency of discharge measurements
- Accuracy of measurements of stage, accuracy of discharge measurements, and interpretations of records

The number of significant figures used to report daily peak discharge is based solely on the magnitude of the discharge value. The same method is applied to the monthly summary table in acre-ft per year:

If the value (ft^3/s) is	Then it is reported as
less than 1 ft^3/s	nearest hundredth
1–10 ft^3/s	nearest tenth
10–1000 ft^3/s	whole number
above 1000 ft^3/s	three significant figures

Data Presentation

The records published in this report consist of a summary table of all three parts for each stream discharge gaging station:

- Station analysis summary
- Station manuscript description with photo
- Data tables for WY 2020 (October 1, 2019, to September 30, 2020).

The station analysis supplements each daily values table and includes a description of monitoring equipment, problems associated with data collection during the water year, and other information used to compute stream flow discharge.

Equipment: A description of the monitoring equipment is provided.

Datum Correction: Datum corrections for the period of record are listed.

Gage-Height Record: Information is provided regarding the stage record itself, including accuracy and periods of inoperability.

The station manuscript provides data under various headings: station location, drainage area, revised records, period of record, gage, average volume, and other points pertinent to station operation and regulation. Each continuous record of discharge includes the following categories of descriptions.

Rating: A description of the rating used to calculate discharge at the stream gaging station site.

Location: The most accurate and available maps, coupled with the light detection and ranging digital elevation model (LIDAR DEM) using North American Datum of 1983 (NAD 83), provide location information.

Drainage Area: The most accurate and available maps provide drainage area measurements. The accuracy of drainage area measurements varies, depending on the type of map available for this purpose.

Revised Records: Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. If the record has been revised, the report in which the most recently revised figure was first published is given.

Period of Record: The period of record is the time during which published records exist for a station or its equivalent station. An equivalent station is one that was in operation when the present station was not in operation and was located so that its records can reasonably be considered equivalent to records from the present station.

Gage: This section describes the type of gage in current use. Under this heading, the datum of the current gage referred to in the National Geodetic Vertical Datum of 1929 (NGVD 29) (see Abbreviations, Acronyms, and Glossary) is a condensed history of the types, locations, and data of previous gages.

Average Volume: The average volume is the average of the annual discharged volume beginning in WY 2012.

Maximum Discharge for Period of Record: The record includes the maximum stage and discharge. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, by direct observation of a non-recording gage or high-water-mark surveys. The minimum stage and discharge are included for perennial streams.

If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Maximum discharge before WY 2010 should be considered estimated because of differences in the current validation and verification methodology.

Maximum Discharge for Current WY: Maximums given are similar to those for the period of record. The time for occurrence of peaks is expressed in 24-hr local standard time. For example, 12:30 A.M. is 0030 and 1:30 P.M. is 1330. The minimums for perennial streams are recorded in a similar manner as the maximums.

The daily table of discharge records for stream discharge gaging stations gives the daily peak discharge for each day of the water year. In the monthly summary for the table, the row titled “Total Volume (acre-ft)” contains the sum of the daily figures of volume for each month in acre-feet, the row titled “Max Daily Peak (acre-ft)” contains the maximum daily volume for the month in acre-feet, the row titled “Min Daily Peak (acre-ft)” contains the minimum daily volume for the month in acre-feet, and the row titled “Missing Days” contains the number of days missing for each month.

Summary of Discharges from Stream Monitoring Stations for WY 2020

Canyon Sites	Estimated Days with Flow	Total Volume (acre-ft)	Instantaneous Maximum Discharge (ft^3/s)
E026 Los Alamos Canyon below Ice Rink	130	57	7.7
E030 Los Alamos Canyon above DP Canyon	1	<0.01	0.01
E038 DP Canyon above TA-21[a]	68	13	38
E039.1 DP Canyon below Grade Control Structure	271	54	21
E040 DP Canyon above Los Alamos Canyon	70	4.9	17
E042.1 Los Alamos above Low Head Weir	41	11	11
E050.1 Los Alamos Canyon below Low Head Weir	5	0.73	0.58
E055 Pueblo Canyon above Acid Canyon	51	35	10
E055.5 South Fork of Acid Canyon	95	15	6
E056 Acid Canyon above Pueblo Canyon	148	36	4.6
E059.5 Pueblo Canyon below WWTF[b]	281	1188	13
E059.8 Pueblo Canyon below Wetlands	181	67	0.67
E060.1 Pueblo Canyon below Grade Control Structure	14	0.06	0.22
E121 Sandia Canyon Right Fork at Power Plant	366	596	22
E122 Sandia Canyon Left Fork at Asphalt Plant	360	120	5.8
E123 Sandia Canyon below Wetlands	355	386	19
E124 Sandia above Firing Range	24	5.9	2.2
E125 Sandia Canyon above SR[c]4	67	0.73	2
E201 Mortandad Canyon above Ten Site Canyon	88	2.3	0.54
E201.5 Ten Site Canyon above Mortandad Canyon	3	0.27	0.15
E204 Mortandad Canyon at LANL Boundary	28	0.03	0.17
E229.3 Cañada del Buey at SR 4	4	0.031	1.2
E240 Pajarito Canyon below SR 501	36	0.11	0.16
E243 Pajarito Canyon above Two Mile Canyon	0	0	0
E244 Two Mile Canyon above Pajarito Canyon	54	2.2	0.38
E245.5 Pajarito Canyon above Three Mile Canyon	3	0.01	0.20
E246 Three Mile Canyon above Pajarito Canyon	15	0.01	0.06
E250 Pajarito Canyon above SR 4	28	0.62	0.53
E252 Water Canyon above SR 501	210	0.71	0.02
E253 Cañon de Valle above SR 501	88	0.07	0.07
E256 Cañon de Valle below MDA[d] P	147	26	1.0
E265 Water Canyon below SR 4	59	9.5	13
E267 Potrillo Canyon above SR 4	0	0	0
E275 Ancho Canyon below SR 4	21	10	414
E338 Chaquehui at TA-33	2	0.1	0.55
E340 Chaquehui Tributary at TA-33	5	0.034	0.61

[a] TA = Technical Area.

[b] WWTF = Los Alamos County Wastewater Treatment Facility.

[c] SR = State Road.

[d] MDA = Material Disposal Area.

Los Alamos/Pueblo Watershed

The Los Alamos Canyon/Pueblo Canyon watershed is located at the northern end of Los Alamos County and LANL. The watershed headwaters on U.S. Forest Service land in the Sierra de los Valles to the west and northwest of LANL. The highest point in the watershed is at the summit of Pajarito Mountain at an elevation of 3182 m (10,441 ft). The watershed extends eastward from the headwaters across the Pajarito Plateau for about 30.4 km (18.9 mi) to its confluence with the Rio Grande at an elevation of 1678 m (5504 ft). The Los Alamos/Pueblo watershed encompasses approximately 57 mi^2. The watershed includes Los Alamos, Pueblo, and DP Canyons. Bayo, Guaje, Rendija, and Barranca Canyons are tributary canyons in the watershed. The watershed contains numerous springs, perennial and ephemeral stream segments, and alluvial groundwater. Portions of Santa Fe National Forest, U.S. Department of Energy– (DOE-) managed property, Los Alamos County (including the Los Alamos townsite), Santa Fe County, and Pueblo de San Ildefonso tribal lands are located within the Los Alamos/Pueblo watershed.

Pueblo Canyon is located on the north side of the Los Alamos townsite and extends from the Jemez Mountains to its confluence with Los Alamos Canyon, approximately 4.5 mi east of the Los Alamos townsite at the intersection of NM 502 and NM 4. Los Alamos Canyon is the southernmost canyon in the watershed. The Los Alamos/Pueblo watershed contains, or may influence, five wetland areas totaling approximately 12.16 acres.

Figure 2 shows the total volume of discharge per month from the upper boundary station in Los Alamos and DP Canyons to the lower boundary stations. As the discharge travels downstream, a considerable amount of transmission loss typically occurs from station to station. During the monsoon season, discharge will not always begin at the upper boundary stations (upper boundary is E026, lower boundary is E050.1) and is highly dependent on the storm track.

Figure 3 shows the total volume of discharge per month from the stream gaging discharge stations within Acid and Pueblo Canyons, located within the Los Alamos/Pueblo watershed. Station E055.5 is the highest station within Acid Canyon and receives the most discharge within this particular section of the watershed. As discharge travels downstream, it is lost via channel transmission. Gaging station E060.1 is located downstream of the Los Alamos County Waste Water Treatment Facility (WWTF) and the Pueblo Canyon grade-control structure. The treatment facility releases effluent daily. Most of the year, this discharge does not reach E060.1, located 1.71 mi downstream of the WWTF.

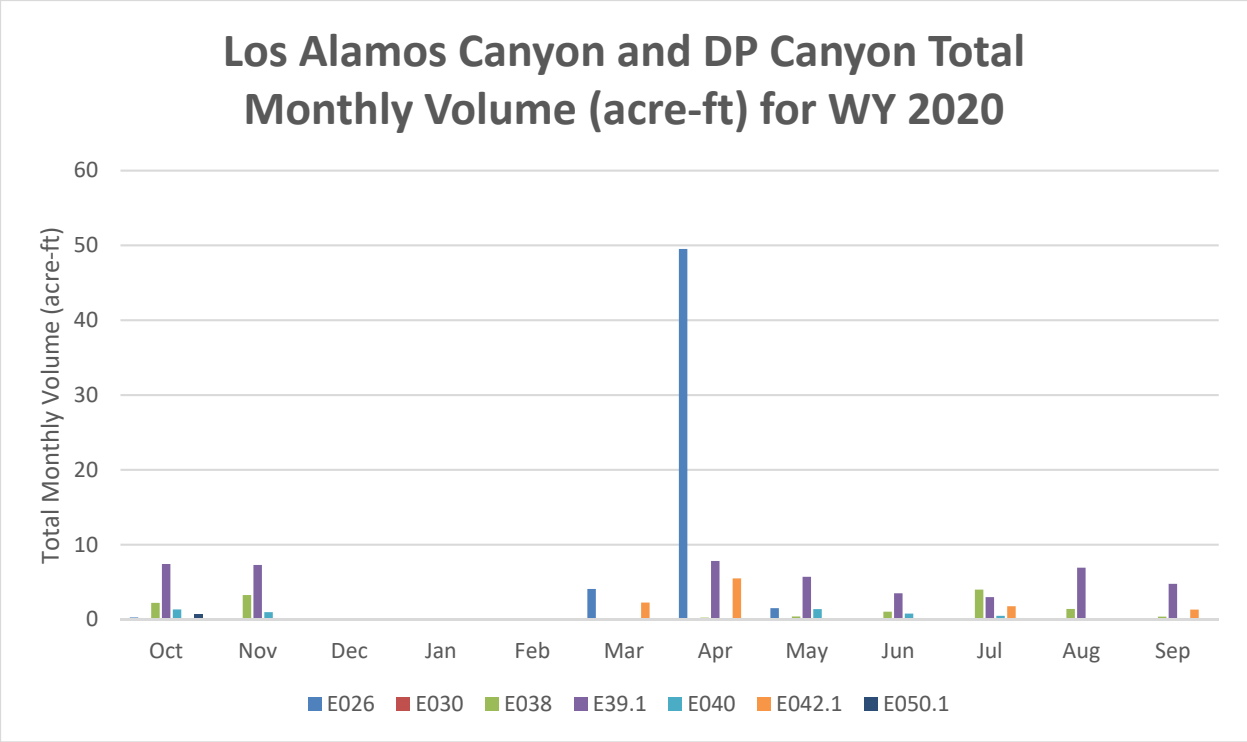


Figure 2 **The total monthly volume (acre-ft) for WY 2020 for Los Alamos Canyon and DP Canyon**

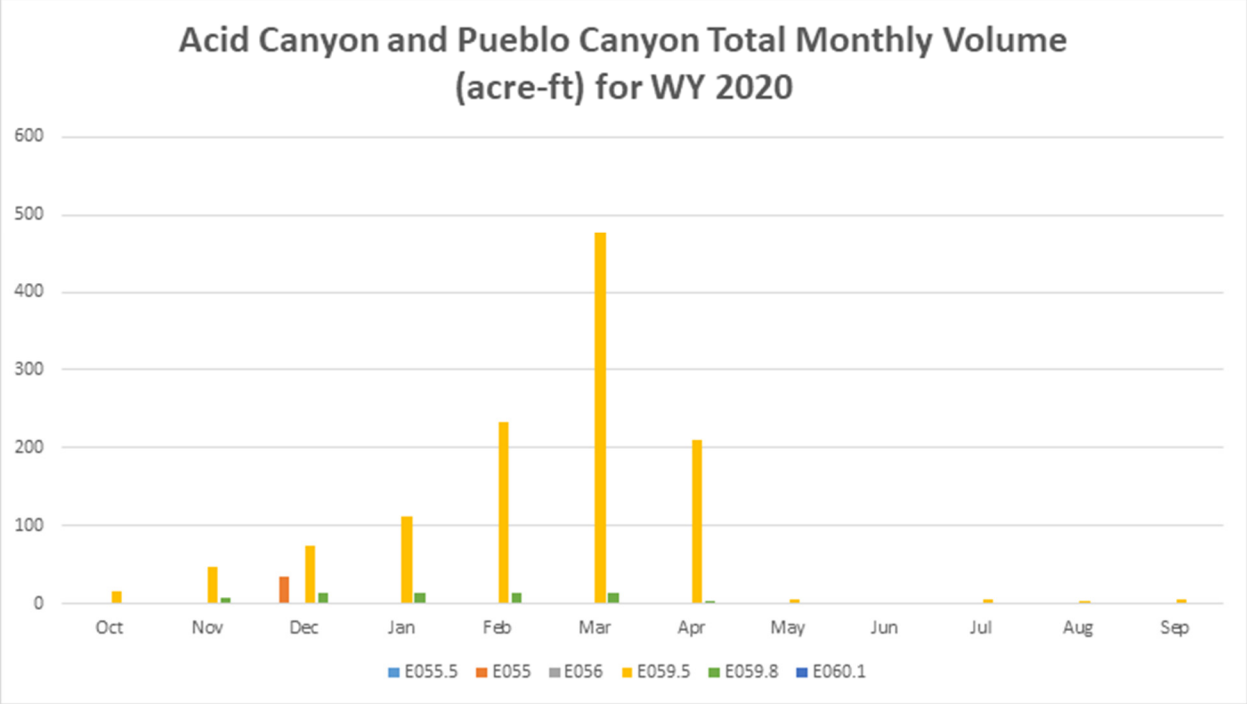


Figure 3 **The total monthly volume (acre-ft) for WY 2020 for Acid Canyon and Pueblo Canyon**

E026 Los Alamos Canyon below Ice Rink

Location. Lat 35° 52’ 49”, Long –106° 19’ 30”, NE ¼, Sec. 17, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 7.07 mi^2.

Period of Record. February 26, 2001, to September 30, 2020.

Revised Record. Drainage area (2006); Section (2007).

Gage. Data logger with radio telemetry. Elevation of gage is 7177 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 235 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 850 ft^3/s, September 13, 2013, maximum gage height exceeded.

Maximum Discharge for WY 2020. Maximum discharge, 7.7 ft^3/s, November 21, 2019, gage height 0.11 ft.

E026 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and an MDS 4710 radio transceiver. A Milltronics sonic probe was used to measure stream stage height until January 9, 2018, when an OTT RLS radar sensor was installed. The system is powered by a solar-panel battery system housed in a National Electrical Manufacturers Association (NEMA) shelter on top of a 24-in. corrugated metal pipe (CMP) well. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurement above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

Datum Correction. Levels run on November 21, 2001, found the gage to be within limits.

Gage-Height Record. The data logger referenced to the inside staff gage gave a complete and satisfactory record, except for November 29, 2019 when the equipment malfunctioned; December 27, 2019; January 16–31, 2019; February 1–16, 2020, when the gaging station sensor was affected by snow and ice in the channel.

Rating. The channel at the gaging station is about 20 ft wide and straight for 20 ft upstream where it bends to the left and then runs straight for about 150 ft downstream. The streambed through this reach is primarily gravel with cobbles. The low-flow control is a rock-and-gravel riffle located 15 ft downstream from the gaging station. The channel is the control for medium and high stages. The scour of this control lead to shift changes during the water year. Rating No. 4 was developed based on Rating No. 3 and extending the upper limits. Flow is partially regulated by the Los Alamos Reservoir about 1.5 mi upstream of the gaging station and the draining of this reservoir.

No discharge measurements were made during the year.

Discharge. Discharges were computed from Rating No. 4.

E026 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0.02	I[a]	0.02	0.44	0.34	0	0	0	0.02
2	0	0	0.02	0	I	0.02	0.36	0.18	0	0	0	0.02
3	0	0	0.22	0	I	0.09	0.52	0.14	0	0	0	0.02
4	0.80	0.02	0.11	0.05	I	0	0.80	0.14	0	0	0	0.02
5	0.14	0.02	0.60	0.02	I	0	0.80	0.11	0	0	0	0.02
6	0.04	0	0.07	0	I	0.02	0.70	0.07	0	0	0	0.02
7	0	0	0.04	0	I	0.02	0.80	0.05	0	0	0	0.02
8	0.02	0	0.04	0	I	0	0.90	0.02	0	0	0	0.02
9	0.02	0	0	0	I	0	1.0	0.02	0	0	0	0.52
10	0	0	0	0	I	0	1.25	0.02	0	0	0.02	0
11	0	0	0	0	I	0	1.75	0.02	0	0	0	0.02
12	0	0	0	0	I	0	1.75	0.04	0	0	0.02	0.02
13	0	0	0	0	I	0	2.0	0.02	0	0	0	0.02
14	0	0	0	0	I	0.02	1.88	0.02	0	0	0	0.02
15	0	0	0	0.14	I	0	1.88	0.02	0	0.05	0	0.02
16	0	0	0	I	I	0.02	1.50	0.02	0	0	0	0
17	0	0	0	I	0.04	0	1.38	0.02	0	0	0	0.02
18	0	0	0.02	I	0.02	0	1.13	0.02	0	0	0	0
19	0	0	0.02	I	0.02	0.11	1.13	0	0	0	0	0
20	0	0	0.02	I	0	0	1.0	0	0	0	0	0.02
21	0	7.7	0.02	I	0	0	0.90	0.02	0	0	0	0.02
22	0	0.18	0.02	I	0.02	0	1.0	0	0	0	0	0.02
23	0	0	0	I	0	0.02	1.0	0	0	0	0	0
24	0	0	0.02	I	0.02	0.14	0.90	0	0	0	0	0.02
25	0	0	0	I	0	0.22	0.80	0	0	0	0	0.02
26	0	0	0	I	0	0.36	0.70	0	0	0	0	0.02
27	0.02	0	I	I	0.02	0.36	0.70	0	0.02	0	0	0.02
28	0.02	0	0	I	0	0.36	0.70	0	0.02	0	0	0
29	0	E[b]	0	I	0.02	0.52	0.52	0	0	0	0	0.02
30	0	0	0	I		0.52	0.52	0	0	0	0	0.02
31	0		0	I		0.44		0		0	0	

[a] I = Ice or snow present in channel.

[b] E = Equipment failure.

E026 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.27	0.25	0.28	I[a,b]	I	4.1	50	1.5	0	0	0	0.03	57
Max Daily Peak (ft^3/s)	0.80	7.7	0.60	I	I	0.52	2.0	0.34	0.02	0.05	0.02	0.52	7.7
Min Daily Peak (ft^3/s)	0	0	0	I	I	0	0	0	0	0	0	0	0
Missing Days	0	1	1	16	16	0	0	0	0	0	0	0	34

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E030 Los Alamos Canyon above DP Canyon

Location. Lat 35° 52’ 21”, Long –106° 15’ 36”, SW ¼, Sec. 13, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 8.57 mi^2.

Period of Record. July 1994 to September 30, 2020.

Revised Record. Drainage area (2006); Township (2007).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6619 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 125 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 970 ft^3/s, September 13, 2013, gage height 4.04 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.1 ft^3/s, October 24, 2019, gage height 0.75 ft.

E030 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 and a radio transceiver. A shaft encoder float system was used to measure stream stage height until February 5, 2018, when an OTT RLS radar sensor was installed. The system is powered by a solar-panel battery system housed in a NEMA shelter on an 18-in. CMP well on the left bank. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stages.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record for the entire year, except for November 28–29, 2019; January 17–30, 2020; and February 13, 2020, when the gage reading was affected by ice and snow in the channel.

Rating. The streambed is sand and gravel and subject to slight movement during flow events. The channel is straight for 300 ft above the gaging station and 50 ft below. Vegetation on the bank is sparse grass.

No discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 3.

E030 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	I*	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	I	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	I	0	0	0	0	0	0	0	0
24	0.01	0	0	I	0	0	0	0	0	0	0	0
25	0	0	0	I	0	0	0	0	0	0	0	0
26	0	0	0	I	0	0	0	0	0	0	0	0
27	0	0	0	I	0	0	0	0	0	0	0	0
28	0	I*	0	I	0	0	0	0	0	0	0	0
29	0	I	0	I	0	0	0	0	0	0	0	0
30	0	0	0	I		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

*I = Ice or snow present in channel.

E030 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Daily Peak (ft^3/s)	0.01	0	0	0	0	0	0	0	0	0	0	0	0.01
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	2	0	14	1	0	0	0	0	0	0	0	17

E038 DP Canyon above TA-21

Location. Lat 35° 52’ 49”, Long –106° 16’ 58”, SW ¼, sec. 14, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.22 mi^2.

Period of Record. April 26, 2000, to September 30, 2020.

Revised Record. Drainage area (2006); Section (2007).

Gage. Data logger with radio telemetry. Elevation of gage is 7087 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 41 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 310 ft^3/s, July 12, 2013, and September 13, 2013, gage height 4.5 ft.

Maximum Discharge for WY 2020. Maximum discharge, 38 ft^3/s, August 1, 2020, gage height 2.23 ft.

E038 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and on February 13, 2018, the Sutron Accubar bubbler self-contained bubbler system was replaced with an OTT RLS radar sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples. The ISCO samplers are housed in a separate shelter, a 3- × 4-ft metal box. The samplers are triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage. All high-flow measurement will be by slope-area or peak-flow computation methods.

The station is also equipped with a tipping bucket rain gage. The Rain Collection II was replaced on April 3, 2019, with a Campbell Scientific TE525. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. Levels run in July 2005 show the gaging station to be within limits.

Gage-Height Record. The data logger referenced to the outside gage gave a complete and satisfactory record, except for December 1–31, 2019; January 1–31, 2020; February 1–29, 2020; and March 1–21, 2020, because of ice and snow in the channel.

Rating. The channel is about 10 ft wide and straight for about 30 ft upstream and downstream. The streambed through this reach is primarily sand, gravel, and larger boulders. The low-flow control is a rock outcrop downstream from the gaging station about 5 ft away. The channel is the control for medium and high stages.

No discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 5.

E038 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	I	I	I	0	0	0	0	38	0
2	0.03	0.06	I	I	I	I	0	0	0	0	0.91	0
3	0	0	I	I	I	I	0	0	0	0	4.5	0
4	20	0	I	I	I	I	0	0.06	0	0	0.06	0
5	0.64	0	I	I	I	I	0	0	0	12	0	0
6	0	0	I	I	I	I	0	0	3.7	0	0	0
7	0.06	0.09	I	I	I	I	0	0	1.8	0.42	0	0.06
8	0.03	0	I	I	I	I	0	0	0	0.52	0	0.82
9	0.06	0	I	I	I	I	0	0.76	0	0.09	0	1.5
10	0	0	I	I	I	I	0	0.03	0	0.06	0	0.12
11	0.03	0	I	I	I	I	0	0	0	0.03	0	0
12	0	0	I	I	I	I	0	0	0	0.27	0	0
13	0	0	I	I	I	I	2.0	0	0	0.27	0	0
14	0	0	I	I	I	I	0.52	0	24	1.0	0	0
15	0	0	I	I	I	I	0	0	0.24	0	0	0
16	0	0	I	I	I	I	0.12	0	0	4.9	0	0
17	0	0	I	I	I	I	0	0	0	12	0	0
18	0	0	I	I	I	I	0	0	0	31	0	0
19	0	0	I	I	I	I	0	0	0	0.12	0	0
20	0	3.7	I	I	I	I	0	0	0	0	0	0
21	0	3.6	I	I	I	I	0	0	0	0	0	0
22	0	0.42	I	I	I	0	0	0	0	0	0	0
23	0	0.67	I	I	I	0	0	0	0	0	0	0
24	1.5	0.33	I	I	I	0	0	0	0	0	0	0
25	0	0.33	I	I	I	0	0	1.6	3.7	0.85	0	0
26	0	0.09	I	I	I	0	0	0.58	0.42	1.6	0	0
27	0	0.18	I	I	I	0	0	0	0	1.6	0	0
28	2.9	0	I	I	I	0	0	0	0	0.88	4.6	0
29	1.9	7.7	I	I	I	0	0	3	0	0.49	0	0
30	7.9	0.64	I	I		0	0	0.18	0	0	0	0
31	0.42		I	I		0		0.06		0	0	

*I = Ice or snow present in channel.

E038 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	2.2	3.3	I[a,b]	I	I	I	0.24	0.39	1.0	4.0	1.4	0.37	13
Max Daily Peak (ft^3/s)	20	7.7	I	I	I	I	2.0	3.0	24	31	38	1.5	38
Min Daily Peak (ft^3/s)	0	0	I	I	I	I	0	0	0	0	0	0	0
Missing Days	0	0	31	31	29	21	0	0	0	0	0	0	112

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E039.1 DP Canyon below Grade Control Structure

Location. Lat 35° 52’ 40”, Long –106° 16’ 17”, SE ¼, Sec. 14, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.40 mi^2.

Period of Record. April 4, 2010, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 7016 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 76 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 400 ft^3/s, September 13, 2013, gage height 4.0 ft.

Maximum Discharge for WY 2018. Maximum discharge, 21 ft^3/s, October 4, 2019, gage height 2.01 ft.

E039.1 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and an MDS 4710 radio transceiver. The shaft encoder float system and the Sutron Accubar bubble sensor was replaced by an OTT RLS radar sensor on February 15, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. A trapezoidal supercritical flume with a 1-ft-wide throat controls flow through the gaging station reach. No provision has been made for direct discharge measurements above the wading stage. An outside staff gage is available for reference. The station is equipped with two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples. The ISCOs are housed in a 3- × 4-ft steel storage box, separate from the other instrumentation. The samplers are triggered by stage through the data logger. All high-flow measurements will be by slope-area or peak-flow computation methods.

Datum Correction. None

Gage-Height Record. The data logger referenced to the outside gage gave a complete and satisfactory record, except for December 17–31, 2019; January 1–31, 2020; February 1–29, 2020; March 1–12, 2020, when the gage was affected by ice and snow in the channel.

Rating. Rating No. 1 is based on precalibrated data for a trapezoidal supercritical flume with a 1-ft-wide throat (Kilpatrick and Schneider 1983) and was used throughout the period.

No discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 1.

E039.1 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.35	0.11	0.28	I*	I	I	0.11	0.32	0.11	0.07	3.3	0.18
2	0.32	0.11	0.18	I	I	I	0.11	0.45	0.11	0.07	0.18	0.14
3	0.35	0.11	0.18	I	I	I	0.11	0.64	0.14	0.11	0.32	0.14
4	20.7	0.11	0.11	I	I	I	0.14	0.73	0.11	0.07	0.21	0.14
5	0.32	0.11	0.14	I	I	I	0.14	0.93	0.11	0.14	0.14	0.14
6	0.07	0.07	0.18	I	I	I	0.14	0.83	0.14	0.07	0.14	0.14
7	0.07	0.21	0.14	I	I	I	0.21	0.18	0.11	0.11	0.14	0.11
8	0.11	0.14	0.18	I	I	I	0.21	0.14	0.11	0.11	0.18	0.14
9	0.11	0.14	0.93	I	I	I	0.25	0.14	0.11	0.11	0.25	2.5
10	0.14	0.14	0.11	I	I	I	0.32	0.18	0.11	0.07	0.28	0.73
11	0.14	0.11	0.14	I	I	I	0.45	0.18	0.11	0.07	0.35	0.18
12	0.11	0.28	0.18	I	I	I	0.64	0.18	0.11	0.07	0.25	0.18
13	0.07	0.11	0.14	I	I	21	0.45	0.32	0.11	0.07	0.18	0.18
14	0.07	0.18	0.11	I	I	0.18	0.45	0.18	0.18	0.07	0.14	0.21
15	0.11	0.14	0.11	I	I	0.11	0.21	0.14	0.14	0.07	0.11	0.21
16	0.11	0.28	0.25	I	I	0.11	0.54	0.14	0.14	0.11	0.14	0.18
17	0.07	0.21	I	I	I	0.11	0.54	0.11	0.11	0.11	0.14	0.18
18	0.07	0.64	I	I	I	5.2	0.83	0.14	0.11	1.0	0.14	0.14
19	0.07	0.35	I	I	I	10	0.73	0.11	0.07	0.21	0.21	0.11
20	0.11	0.25	I	I	I	0.21	0.73	0.11	0.11	0.18	0.21	0.11
21	0.11	2.84	I	I	I	0.14	0.54	0.11	0.07	0.35	0.18	0.11
22	0.18	0.25	I	I	I	0.11	0.64	0.11	0.07	0.21	0.21	0.21
23	0.14	0.07	I	I	I	0.11	0.93	0.11	0.07	0	0.18	0
24	0.32	0.11	I	I	I	0.11	0.83	0.11	0.07	0.11	0.35	0
25	0.11	0.21	I	I	I	0.11	0.35	0.35	0.07	0.25	0.21	0
26	0.14	0.32	I	I	I	0.11	0.35	0.11	0.11	0.25	0.21	0
27	0.07	0.93	I	I	I	0.11	0.64	0.11	0.11	0.32	0.14	0
28	0.07	0.45	I	I	I	0.14	0.54	0.11	0.07	0.28	0.18	0
29	0.11	10	I	I	I	0.11	0.45	0.11	0.07	0.11	0.14	0.04
30	0.11	0.25	I	I		0.14	0.35	0.18	0.14	0.11	0.14	0
31	0.11		I	I		0.11		0.14		0.18	0.25	

*I = Ice or snow present in channel.

E039.1 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	7.4	7.3	I[a,b]	I	I	7.7	7.8	5.7	3.5	3.0	6.9	4.8	54
Max Daily Peak (ft^3/s)	21	10	I	I	I	21	0.93	0.93	0.18	1.0	3.3	2.5	21
Min Daily Peak (ft^3/s)	0	0	I	I	I	0	0	0	0	0	0	0	0
Missing Days	0	0	15	31	29	12	0	0	0	0	0	0	87

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E040 DP Canyon above Los Alamos Canyon

Location. Lat 35° 52’ 24”, Long –106° 15’ 34”, SW ¼, Sec. 13, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.60 mi^2.

Period of Record. May 1999 to September 30, 2020.

Revised Record. Drainage area (2006); Section (2007).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6621 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 28 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 550 ft^3/s, September 13, 2013, gage height 6.12 ft.

Maximum Discharge for WY 2018. Maximum discharge, 17 ft^3/s, October 4, 2019, gage height 2.9 ft.

E040 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Milltronics sonic probe was replaced with an OTT RLS radar sensor on January 5, 2018. The system is powered by a solar-panel battery system. All equipment is housed in a NEMA shelter. The station is equipped with an ISCO pump sampler (12-count 1-L glass or polyethylene bottles) to collect water-quality samples. The sampler is housed in a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. High-flow measurements can be made from the bridge upstream of the gaging station.

Datum Correction. None from levels.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for December 26–31, 2019; January 1–8 and 17–31, 2020; March 19–31, 2020; and April 1–26, 2020, when the gage was affected by ice and snow.

Rating. The channel is about 15 ft wide and bends to the right above the gaging station and straight for about 100 ft downstream. The streambed through this reach is primarily sand with large boulders. The control at this site is concrete with a v-notch in the middle for low flow. The channel becomes the control for medium to high flows.

No discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 3.

E040 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0.03	I*	0	0	I	0	0.05	0.02	0	0
2	0	0	0	I	0	0	I	0	0.05	0.03	0	0
3	0	0	0	I	0.01	0	I	0	0.03	0.02	0	0
4	17	0	0	I	0.01	0	I	0	0.03	0	0	0
5	0	0	0	I	0.01	0	I	0	0.02	0.03	0	0
6	0	0	0	I	0.01	0	I	0	0.06	0.01	0	0
7	0	0	0	I	0.01	0	I	0	0.03	<0.01	0	0
8	0	0	0	I	0.01	0	I	0	0.01	<0.01	0	0
9	0	0	0	0	0	0	I	0	0.01	0.05	0	0
10	0	0	0	0	0	0	I	0	0	0.05	0	0
11	0	0	0	0	0.01	0	I	0	0	0.12	0	0
12	0	0	0	0	0.03	0	I	0	0.01	0.15	0	0
13	0	0	0.01	0	0.09	17	I	0	0.03	0.06	0	0
14	0	0	0	0	0	0.46	I	0	0.06	0	0	0
15	0	0	0	0	0	0.80	I	0	0.09	0	0	0
16	0	0	0.01	0	0	0.59	I	0	0.09	0	0	0
17	0	0	0.01	I	0	0.40	I	0	0.06	0	0	0
18	0	0	0.01	I	0	0.42	I	0.21	0.05	0	0	0
19	0	0	0.01	I	0	I	I	0.16	0.05	0	0	0
20	0	0	0.01	I	0	I	I	0.15	0	0	0	0
21	0	0	0	I	0	I	I	0.16	0	0	0	0
22	0	0	0	I	0	I	I	0.14	0	0	0	0
23	0	0	0	I	0	I	I	0.07	0	0	0	0
24	0	0	0	I	0	I	I	0.07	0.02	0	0	0
25	0	0	0	I	0	I	I	0.07	0.02	0	0	0
26	0	0	I	I	0	I	I	0.10	0	0	0	0
27	0	0	I	I	0	I	0	0	0	0	0	0
28	0	0	I	I	0	I	0	0.05	0.03	0	0	0
29	0	7.1	I	I	0	I	0	0.04	0.03	0	0	0
30	0	0.03	I	I		I	0	0.05	0.01	0	0	0
31	0		I	I		I		0.09		0	0	

*I = Ice or snow present in channel.

E040 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	1.3	0.96	0.03	I[a,b]	0.01	I	I	1.3	0.78	0.47	0	0	4.9
Max Daily Peak (ft^3/s)	17	7.1	0.03	I	0	I	I	0.21	0.09	0	0	0	17
Min Daily Peak (ft^3/s)	0	0	0	I	0	I	I	0	0	0	0	0	0
Missing Days	0	0	6	23	0	13	26	0	0	0	0	0	68

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E042.1 Los Alamos above Low Head Weir

Location. Lat 35° 52’ 2”, Long –106° 13’ 25”, NW ¼, Sec. 20, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 10.13 mi^2.

Period of Record. May 4, 2010, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6377 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 184 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 740 ft^3/s, September 13, 2013, gage height 5.59 ft.

Maximum Discharge for WY 2020. Maximum discharge, 11 ft^3/s, April 1, 2020, gage height 0.66 ft.

E042.1 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and a MDS 4710 radio transceiver. On November 2, 2016, a VegaPul WL 61 radar sensor was added to the shaft encoder float system and the Sutron Accubar air-purge bubble sensor, housed in a NEMA shelter. The shelter is secured atop a stilling well, a vertical 2-ft-diameter CMP. On November 28, 2018, an OTT RLS radar sensor replaced the three other stream water level sensors. An outside staff gage is available for reference. A trapezoidal supercritical flume with a 1-ft-wide throat controls flow through the gage reach. No provision has been made for direct discharge measurements above the wading stage.

Two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples are triggered by stage through the data logger. The station is powered by a solar-panel battery system. The samplers and batteries are in a 3- × 4-ft steel storage box, separate from the other instrumentation. A tipping bucket rain gage with 0.01-in. resolution is mounted about 30 ft from the station.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for January 3 and 16–17, 2020; and February 10–11, 2020 when the gage was affected by ice and snow.

Rating. Rating No. 1 is based on precalibrated data for the flume used (Kilpatrick and Schneider 1983) and was used throughout the period.

No discharge measurements were made during the year.

Discharge. Discharge was computed directly by Rating No. 1 for the entire water year. Days estimated were based on precipitation and nearby gaging stations for verification. Flow is partially regulated by the Los Alamos Reservoir, located about 7.8 mi upstream.

E042.1 Daily Mean Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	11	0	0	0	0	0
2	0	0	0	0	0	0	9.6	0	0	0	0	0
3	0	0	0	I*	0	0	0	0	0	0	0	0
4	2.2	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0.21	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0.07	0	0	0	I	0	0	0	0	0	0	0.04
11	0	0	0	0	I	0	0	0	0	0	0	0.96
12	0	0	0	0	0	0	0	0	0	0.04	0	1.4
13	0	0	0	0	0.25	0.04	9.3	0	0	3.6	0	0.42
14	0	0	0	0	0	0	0	0	0	4.0	0	0.25
15	0	0	0	0	0	0	0	0	0	0	0	1.1
16	0	0	0	I	0	0	0.35	0	0	0	0	1.3
17	0	0	0	I	0	0.14	0	0	0	0	0	0
18	0.14	0	0	0	0	8.1	0	0	0	0	0	0
19	0	0	0	0	0	6.2	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0.58	0	0	0	0	0	0	0	0	0	0.50
22	0	0	0	0	0	0	0	0	0	0	0	0.07
23	0	0	0	0	0	2.8	0	0	0	0	0	0
24	0.35	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	4.5	0	0
26	0	0	0	0	0	8.7	0	0	0	0	0	0
27	0	0.35	0	0	0	0	0	0	0	0.07	0	0
28	1.3	0.245	2.0	0	0	0	0	0	0	0.42	0	0
29	0	1.2	0	0	0	0.11	0	0	0	0	0	0
30	0	0	0	0		0.25	0	0.50	0	0	0	0
31	0		0	0		0		0		4.7	0	

*I = Ice or snow present in channel.

E042.1 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.12	0.03	0.03	0	0	2.3	5.5	0.01	0.03	1.7	0	1.3	11
Max Daily Peak (ft^3/s)	2.2	1.2	2.0	0	0.25	8.7	11	0.50	0	4.7	0	1.4	11
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	3	2	0	0	0	0	0	0	0	5

E050.1 Los Alamos Canyon below Low Head Weir

Location. Lat 35° 52’ 2”, Long –106° 13’ 3”, NE ¼, sec. 20, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 10.44 mi^2.

Period of Record. July 22, 2010, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6340 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 162 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 740 ft^3/s, September 13, 2013, gage height 5.81 ft.

Maximum Discharge for WY 2018. Maximum discharge, 0.58 ft^3/s, October 4, 2019, gage height 0.13 ft.

E050.1 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, a shaft encoder float system, and a Sutron Accubar air-purge bubble sensor, housed in a NEMA shelter. The shelter is secured atop a stilling well, a vertical 2-ft-diameter CMP. A Milltronics sonic probe mounted to an arm above the channel was also used until February 22, 2018, when it was replaced by an OTT RLS radar sensor. An outside staff gage is available for reference. A trapezoidal supercritical flume with a 1-ft-wide throat controls flow through the gaging station reach. No provision has been made for direct discharge measurements above the wading stage.

The station is equipped with two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count polyethylene bottle sampler) to collect water-quality samples. The ISCO samplers are housed in a separate shelter, a 3- × 4-ft metal box. The samplers are triggered by stage through the data logger. A line-of-sight radio transceiver provides 5-min stage data from the bubble sensor, radar, and encoder.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. Rating No. 1 is based on precalibrated data for the flume used (Kilpatrick and Schneider 1983) and was used throughout the period.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying Rating No. 1 for the entire water year.

E050.1 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0.58	0	0	0	0	0	0	0	0	0	0	0
5	0.07	0	0	0	0	0	0	0	0	0	0	0
6	0.04	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0.28	0	0	0	0	0	0	0	0	0	0	0
10	0.28	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

E050.1 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.73	0	0	0	0	0	0	0	0	0	0	0	0.73
Max Daily Peak (ft^3/s)	0.58	0	0	0	0	0	0	0	0	0	0	0	0.58
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

E055 Pueblo Canyon above Acid Canyon

Location. Lat 35° 53’ 20”, Long –106° 18’ 14”, SE ¼, Sec. 9, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 3.42 mi^2.

Period of Record. October 1, 2002, to September 30, 2020.

Revised Record. Average discharge (2007, 2008).

Gage. Data logger with radio telemetry. Elevation of gage is 6943 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 62 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1200 ft^3/s, September 13, 2013, gage height 6.86 ft.

Maximum Discharge for WY 2018. Maximum discharge, 10 ft^3/s, March 14, 2020, gage height 0.36 ft.

E055 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor until August 29, 2019, when it was replaced by an OTT RLS radar sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 29, 2019; January 7–31, 2020; February 1–29, 2020; and March 1–10, 2020 when the gage was affected by ice and snow.

Rating. The channel comes into the gaging station from a left-to-right bend and bends hard left at about 100 ft below the gaging station. The bed consists of unstable sand and gravel with some boulders. The left bank downstream from the gaging station is heavily wooded, tending to hold the flow to the right, away from the reach of the gaging station. The lower end of any stage-discharge relation will be unstable here. Rating No. 2 was developed using one critical-depth measurement of 850 ft^3/s and various low-flow measurements from previous years. The low-water definition is poor, and the high end needs to be confirmed. The low end of the rating was verified by a dye study and was used to enhance the rating. Rating No. 2 is good. Rating No.3 was developed using Rating No. 2 and by extending the upper range.

No discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 3.

E055 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0.92	0.08	I*	I	0.17	0	0	0	0	0
2	0	0	0.75	0	I	I	0	0	0	0	0	0
3	0	0	0.58	0	I	I	0	0	0	0	0	0
4	0	0	0.58	0.17	I	I	0	0	0	0	0	0
5	0	0	0.50	0.17	I	I	0	0	0	0	0	0
6	0	0	0.33	0.17	I	I	0	0	0	0	0	0
7	0	0	2.0	I	I	I	0	0	0	0	0	0
8	0	0	1.7	I	I	I	0	0	0	0	0	0
9	0	0	4.7	I	I	I	0	0	0	0	0	0
10	0	0	1.4	I	I	I	0	0	0	0	0	0
11	0	0	0.92	I	I	0.08	0	0	0	0	0	0
12	0	0	0.83	I	I	0	0	0	0	0	0	0
13	0	0	0.67	I	I	10	0.25	0	0	0	0	0
14	0	0	0.58	I	I	0	0	0	0	0	0	0
15	0	0	0.58	I	I	0	0	0	0	0	0	0
16	0	0	0.33	I	I	0	0	0	0	0	0	0
17	0	0	7.0	I	I	0	0	0	0	0	0	0
18	0	0	1.3	I	I	0	0	0	0	0	0	0
19	0	0	0.83	I	I	7.6	0	0	0	0	0	0
20	0	0	1.4	I	I	0	0	0	0	0	0	0
21	0	0.50	0.42	I	I	0	0	0	0	0	0	0
22	0	0	0.42	I	I	0	0	0	0	0	0	0
23	0	0	0.50	I	I	0	0	0	0	0	0	0
24	0	0	0.42	I	I	0.20	0	0	0	0	0	0
25	0	0	0.25	I	I	0.43	0	0	0	0	0	0
26	0	0	0.25	I	I	0.74	0	0	0	0	0	0
27	0	0	0.92	I	I	0.75	0	0	0	0	0	0
28	0.42	0	0.58	I	I	0.67	0	0	0	0	0	0
29	0	I	0.25	I	I	0.50	0	0	0	0	0	0
30	0	2.8	0.25	I		0.42	0	0	0	0	0	0
31	0		0.17	I		0.25		0		0	0	

*I = Ice or snow present in channel.

E055 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.12	11	36	I[a,b]	I	0.01	0.59	0	0	0	0	0	47
Max Daily Peak (acre-ft)	0.42	2.8	7.0	I	I	10	0.25	0.0	0	0	0	0	10
Min Daily Peak (acre-ft)	0	0	0	I	I	0	0	0	0	0	0	0	0
Missing Days	0	0	0	25	29	10	0	0	0	0	0	0	64

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E055.5 South Fork of Acid Canyon

Location. Lat 35° 53’ 10”, Long –106° 18’ 26”, SE ¼, Sec. 9, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.08 mi^2.

Period of Record. August 18, 2004, to September 30, 2020.

Revised Record. Period of record (2009).

Gage. Data logger with radio telemetry. Elevation of gage is 7101 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 8 yr, 14 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge 90 ft^3/s, September 13, 2013, gage height 6.2 ft.

Maximum Discharge for WY 2020. Maximum discharge 6 ft^3/s, July 18, 2020, gage height 0.75 ft.

E055.5 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor, housed in a NEMA shelter on the left bank. The Sutron Accubar bubbler sensor was replace by an OTT RLS radar sensor May 12, 2017. The system is powered by a solar-panel battery system. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The samples are triggered by stage through the data logger. The samplers are housed in a separate shelter, a 3- × 4-ft metal box. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

The station is also equipped with a tipping bucket rain gage. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. Log check dams in Acid Canyon just below E055.5 installed in 2017 caused the channel bed to fluctuate significantly through 2017. On March 22, 2018, the gaging station at E055.5 was relocated 35 ft upstream to a more stable location.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for December 1–31, 2019; January 1–31, 2020; February 1–29, 2020; and March 1–13, 2020, when the gage was affected by ice and snow in the channel.

Rating. The channel is straight for about 40 ft upstream and 135 ft downstream. The channel is trapezoidal with little vegetation. The streambed through this reach is primarily bedrock with some sand catches above and a bed of sand starting about 30 ft downstream where the old station was located. The control is a bedrock nick point below the gaging station.

Rating No. 2 was developed by one discharge measurement of low flow and one slope-area measurement of peak flow. The rating curve was extended to 6.22, based on a critical-depth computation. Rating No. 2 was used until October 2018 when one cross-section at the new gage station's sensor location and the channel slope were surveyed. The survey data were used to calculate multiple discharge measurements at different stage heights using the Manning's formula to create rating curve No.3. Rating No. 4 was developed with used beginning January 2020.

No discharge measurements were made during the year.

Discharge. Discharge was computed by applying Rating No. 3 and No. 24.

E055.5 Daily Peak Stage WY 2020 (ft)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.09	0	I*	I	I	I	0	0	0.20	0	1.9	0
2	0.10	0	I	I	I	I	0	0	0.20	0	1.9	0
3	0	0	I	I	I	I	0	0	0.70	0	1.1	0
4	0.17	0	I	I	I	I	0	0	0.36	0	0.24	0
5	<0.01	0	I	I	I	I	0	0	0.36	3.8	0.24	0
6	<0.01	0	I	I	I	I	0	0	0.99	0.28	0.15	0
7	0.01	0	I	I	I	I	0	0	0.24	0.28	0	0
8	0.01	0	I	I	I	I	0	0	0.20	0	0	0.95
9	0.01	0	I	I	I	I	0	0	0.20	0	0	0.95
10	0	0	I	I	I	I	0	0	0.20	0	0	0.20
11	0	0	I	I	I	I	0	0	0.24	0	0	0.03
12	0	0	I	I	I	I	0	0	0.36	0	0	0
13	0	0	I	I	I	I	0.49	0	0	0	0	0
14	0	0	I	I	I	0.15	0.20	0.20	3.6	0	0	0
15	0	0	I	I	I	0.11	0.36	0.20	0.28	0	0	0
16	0	0	I	I	I	0.15	0.20	0.15	0.28	0	0.03	0
17	0	0	I	I	I	0.07	0.15	0.11	0.24	0.86	0	0
18	0	0	I	I	I	1.7	0.11	0	0	6.0	0	0
19	0	0	I	I	I	1.8	0.03	0	0	0.32	0	0
20	0	0.05	I	I	I	0.15	0	0	0	0.24	2.6	0
21	0	0.06	I	I	I	0.20	0	0	0	0.20	0	0
22	0	0	I	I	I	0.15	0	0	0	0	0	0
23	0	0	I	I	I	0.15	0	0	0.20	0	0	0
24	0	0.02	I	I	I	0.15	0	0	0.32	0	0	0
25	0	0.03	I	I	I	0.11	0	0	1.9	0	0	0
26	0	0.06	I	I	I	0.11	0	0	0.24	0.78	0	0
27	0	0.02	I	I	I	0.11	0	0	0.24	0.95	0	0
28	0.05	0.08	I	I	I	0.20	0	0	0	0.57	0.82	0
29	0	0.18	I	I	I	0	0	1.6	0	0.24	0.07	0
30	0	0.05	I	I		0	0	0.20	0	0.20	0.07	0
31	0		I	I		0		0.20		0	0.03	

*I = Ice or snow present in channel.

E055.5 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.20	0.12	I[a,b]	I	I	I	1.4	1.4	4.9	4.8	1.8	0.50	15
Max Daily Peak (ft^3/s)	0.17	0.18	I	I	I	I	0.49	1.6	3.6	6.0	2.6	0.95	6.0
Min Daily Peak (ft^3/s)	0	0	I	I	I	I	0	0	0	0	0	0	0
Missing Days	0	0	31	31	29	13	0	0	0	0	0	0	104

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E056 Acid Canyon above Pueblo Canyon

Location. Lat 35° 53’ 19”, Long –106° 18’ 14” SE ¼, Sec. 9, T, 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.452 mi^2.

Period of Record. October 1, 2006, to September 30, 2020.

Revised Record. Period of record (2008).

Average Volume. 9 yr, 44 acre-ft/yr.

Gage. Data logger with radio telemetry. Elevation of gage is 6944 ft using LANL LIDAR DEM with NAD 83.

Maximum Discharge for Period of Record. Maximum discharge, 470 ft^3/s, September 13, 2013, gage height 8.6 ft.

Maximum Discharge for WY 2020. Maximum discharge, 4.6 ft^3/s, March 13, 2020, gage height 2.04 ft.

E056 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor mounted on a 6-in. channel cantilevered over the streambed, which was replaced on August 28, 2019, by an OTT RLS radar sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provisions have been made for measurements above the wading stage.

Datum Correction. None. The levels are from June 6, 2006. The gage is within acceptable limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 27–30, 2019; December 1–31, 2019; January 1–31, 2020; and February 1–20, 2020, when the gage was affected by snow and ice.

Rating. The channel is about 20 ft wide and straight for about 15 ft upstream and straight for about 40 ft downstream and 20 ft above the confluence of Pueblo Canyon. The streambed through this reach is primarily sand and cobbles. The low-water control is a 90-degree sharp-crested weir. At high flow, the channel becomes the control.

Rating No. 3 is based on four discharge measurements and six indirect measurements made by a concurrent dye study at the site. Shifts were applied to low flow using “V” diagrams. Rating No. 4 is based on Rating No. 3 with an extension of the upper range.

No discharge measurements were taken during the year.

Discharge. Discharge was computed by applying the gage height to Rating No. 4.

E056 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.04	I*	I	I	0.20	0.18	0	0	0	0.16	0
2	0.08	0.04	I	I	I	0.20	0.16	0	0	0.14	0.16	0
3	0.08	0.04	I	I	I	0.20	0.16	0	0	0	0.16	0
4	4.6	0.04	I	I	I	0.20	0.14	0	0	0	0.18	0
5	0.10	0.04	I	I	I	0.20	0.12	0	0	0	0.18	0
6	0.12	0.02	I	I	I	0.22	0.12	0	0	0	0.20	0
7	0.14	0.02	I	I	I	0.22	0.08	0	0	0.02	0.20	0
8	0.16	0.02	I	I	I	0.27	0.04	0	0	0.12	0.22	0
9	0.18	0.02	I	I	I	0.27	0	0	0	0.22	0.22	0
10	0.20	0	I	I	I	0.27	0	0	0	0.18	0.27	0
11	0.20	0	I	I	I	0.25	0	0	0	0.20	0.25	0
12	0.18	0	I	I	I	0.25	0	0	0	0.08	0.25	0.06
13	0.18	0.02	I	I	I	4.6	0.04	0	0	0.08	0.27	0.14
14	0.18	0	I	I	I	0.16	0	0	0	0	0.25	0.20
15	0.18	0	I	I	I	0.18	0	0	0	0	0.25	0.22
16	0.14	0	I	I	I	0.20	0	0	0	0.06	0.22	0.27
17	0.16	0	I	I	I	0.18	0	0	0	0	0.16	0.29
18	0.27	0	I	I	I	0.18	0	0	0	0.08	0	0.29
19	0.14	0	I	I	I	1.7	0	0	0	0	0	0.31
20	0.25	0	I	I	I	0.22	0	0	0	0	0	0.31
21	0.37	0.20	I	I	0.18	0.20	0	0	0	0.02	0	0.31
22	0.14	0.06	I	I	0.22	0.20	0	0	0	0.08	0	0.29
23	0.04	0	I	I	0.14	0.18	0	0	0	0.08	0	0.29
24	0.49	0.02	I	I	0.14	0.20	0	0	0	0.10	0	0.29
25	0.16	0.02	I	I	0.12	0.18	0	0	0	0.12	0	0.31
26	0	0.02	I	I	0.16	0.18	0	0	0	0.12	0	0.22
27	0.02	I	I	I	0.18	0.16	0	0	0	0.14	0	0.22
28	0.51	I	I	I	0.18	0.16	0	0	0	0.14	0	0.12
29	0.14	I	I	I	0.20	0.20	0	0	0	0.16	0	0
30	0.06	I	I	I		0.18	0	0	0	0.14	0	0
31	0.06		I	I		0.18		0		0.14	0	

*I = Ice or snow present in channel.

E056 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	5.8	0.10	I[a,b]	I	0,10	12	1.6	0	0	3.0	6.2	7.1	38
Max Daily Peak (acre-ft)	4.6	0.20	I	I	0.22	4.6	0.18	0	0	0	0.27	0.31	4.6
Min Daily Peak (acre-ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	4	31	31	20	0	0	0	0	0	0	0	86

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E059.5 Pueblo Canyon below Los Alamos County WWTF

Location. Lat 35° 52’ 52.72” N, Long -106° 14’ 22.89” W, Zone 13S, NM23, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 3.26 mi^2.

Period of Record. May 10, 2014, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6483 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 6 yr, 523 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 97 ft^3/s, July 31, 2014, gage height, 6.23 ft.

Maximum Discharge for WY 2018. Maximum discharge, 13 ft^3/s, March 13, 2020, gage height, 0.61 ft.

E059.5 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor. Two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples are triggered by stage through the data logger. The station is powered by a solar-panel battery system. The samplers and batteries are in a 3- × 4-ft steel storage box, separate from the other instrumentation. No flow-control structure exists in the channel. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. Open channel.

Rating No. 1 was developed from a step-backwater survey conducted in September 2010. The control is the channel at all flows. The channel bed is highly mobile sand, and stage shifts will be required to account for frequent reshaping of the channel by discharge.

Two discharge measurements were made during the year.

Discharge. Discharge was computed using Rating No. 1.

E059.5 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	1.5	1.8	2.6	4.4	9.2	11	0	1.1	0	0.72	0.30
2	0	2.0	2.4	2.2	4.7	10	11	0	1.2	0	1.2	0
3	0	1.8	2.2	2.4	4.4	10	8.8	0.27	1.1	0	1.0	0
4	0.10	1.4	2.4	2.6	4.4	11	12	0.43	0	0	1.4	0
5	0.43	1.7	2.2	2.8	4.7	9.6	12	0.50	0	0	0.20	0.03
6	0.72	1.7	2.0	3.6	5.0	9.2	10	0	0	0	0.03	0.07
7	0.85	1.7	2.2	3.1	4.4	10	11	0	0.72	0	0	0
8	0.85	1.5	2.6	3.1	5.3	11	9.2	0	1.2	0	0.03	0.17
9	0.72	1.7	2.4	2.6	5.3	11	11	0	0	0	0.17	0.37
10	0.47	1.8	2.6	3.3	5.3	11	9.2	0.10	0	0	0	0.50
11	0.37	1.8	2.4	3.1	5.6	11	10	1.1	0	0	0.27	0.43
12	0.60	1.7	2.6	3.1	5.9	11	11	0	0	0	0	0.50
13	0.85	1.8	1.8	3.1	5.9	13	11	0	0	0	0	0.50
14	0.85	1.7	2.6	3.1	5.9	12	9.6	1.1	0	0	0	0.50
15	0.40	1.5	2.6	3.1	5.9	12	10	0.50	0	0	0	2.0
16	0.43	1.8	2.4	3.8	5.9	11	7.6	1.2	0	0.03	0	0.40
17	0.72	1.7	2.2	3.3	7.3	11	5.9	1.4	0	0	0	0.17
18	0.40	1.4	2.2	3.1	6.9	12	6.2	2.4	0	0	0.20	0.20
19	0.37	1.2	2.4	3.1	6.6	12	8.0	2.8	0	0.43	0	0
20	0.72	2.2	2.2	3.6	6.9	11	11	2.0	0	1.1	0.03	0.47
21	1.0	2.4	2.6	3.6	6.6	11	2.0	1.1	0	0.85	0	0.30
22	0.50	1.8	2.8	3.3	7.3	12	5.3	0	0	0.13	0	0.23
23	0.85	2.0	2.2	3.6	8.0	10	4.7	0	0	0.03	0.10	1.2
24	0.72	2.2	2.2	3.6	8.4	10	1.8	0	0	0.03	0	0.85
25	0.85	2.0	2.0	3.8	8.0	11	2.2	0	0	0.47	0	0.47
26	1.0	1.8	2.0	4.1	8.4	11	1.1	0	0	1.0	0	0.72
27	1.1	1.8	2.2	4.1	8.4	12	0.43	0.33	0	1.2	0	0
28	0.72	2.0	2.2	4.1	8.0	11	0	0	0	2.2	0	0.07
29	1.1	2.4	2.2	3.8	8.8	11	0	0	0	1.4	0.07	0
30	1.4	1.7	2.4	4.1		10	0.47	0.30	0	1.5	0.43	0.30
31	1.5		2.6	3.6		10		1.4		0.10	0.33	

E059.5 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	15	47	74	112	233	477	210	5.2	2.1	4.8	2.8	5.8	1188
Max Daily Peak (ft^3/s)	1.5	2.4	2.8	4.1	8.8	13	12	2.8	1.2	2.2	1.4	2.0	13
Min Daily Peak (ft^3/s)	0	0	0.17	0.27	0.43	2.1	0	0	0	0	0	0	0
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

E059.8 Pueblo Canyon below Wetlands

Location. Lat 35° 52’ 38.489” N, Long –106° 13’ 35.418” W, Zone 13N, NM17, T. 19 N., R. 7 E., Santa Fe County

Drainage Area. 7.75 mi^2.

Period of Record. October 9, 2015, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6410 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 5 yr, 62 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 10 ft^3/s, October 21, 2015, gage height, 1.51 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.67 ft^3/s, March 19, 2020, gage height, 0.98 ft.

E059.8 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor. The bubble sensor was replaced on August 6, 2020 with an OTT RLS radar sensor. Two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples are triggered by stage through the data logger. The station is powered by a solar-panel battery system. The samplers and batteries are in a 3- × 4-ft steel storage box, separate from the other instrumentation. A v-notch weir is the control. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record except June 4–30, 2020; July 1–30, 2020; and August 1–6 2020, when the bubble sensor failed.

Rating. 90-degree v-notch weir with a board-crested weir above the notch.

Rating No. 1 was developed from a 90-degree weir plate formula and broad-crested weir computation above the notch.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying using Rating No. 1 for the entire year.

E059.8 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.15	0.31	0.39	0.36	0.36	0.29	<0.01	0	E*	E	0
2	0	0.23	0.39	0.36	0.47	0.44	0.27	0	0	E	E	0
3	0	0.25	0.36	0.34	0.41	0.36	0.27	0	0	E	E	0
4	0	0.29	0.34	0.39	0.41	0.34	0.17	0	E	E	E	0
5	0	0.06	0.36	0.44	0.34	0.34	0.23	0	E	E	E	0
6	0	0.18	0.31	0.50	0.50	0.27	0.25	0	E	E	E	0
7	0	0.25	0.36	0.44	0.39	0.34	0.04	0	E	E	0	0
8	0	0.21	0.47	0.44	0.39	0.39	0.05	0	E	E	0	0
9	0	0.21	0.50	0.41	0.41	0.44	0.01	0	E	E	0	0
10	0	0.23	0.36	0.39	0.44	0.34	0.05	0	E	E	0	0
11	0	0.27	0.39	0.47	0.41	0.34	0.01	0	E	E	0	0
12	0	0.31	0.36	0.44	0.44	0.34	0.01	0	E	E	0	0
13	0	0.29	0.29	0.47	0.36	0.59	0.23	0	E	E	0	0
14	0	0.17	0.39	0.44	0.44	0.41	0.18	0	E	E	0	0
15	0	0.17	0.41	0.36	0.39	0.39	0.20	0	E	E	0	0
16	0	0.15	0.41	0.47	0.34	0.41	0.21	0	E	E	0	0
17	0	0.23	0.31	0.44	0.44	0.39	0.17	0	E	E	0	0
18	0	0.27	0.34	0.36	0.44	0.63	0.02	0	E	E	0	0
19	0	0.23	0.36	0.36	0.36	0.67	0.05	0	E	E	0	0
20	0	0.34	0.34	0.41	0.36	0.39	0.44	0	E	E	0	0
21	0	0.47	0.41	0.44	0.34	0.39	0.18	0	E	E	0	0
22	0	0.39	0.41	0.41	0.39	0.39	0.02	0	E	E	0	0
23	0	0.36	0.34	0.36	0.44	0.39	0.06	0	E	E	0	0
24	0	0.39	0.41	0.41	0.47	0.31	0.01	0	E	E	0	0
25	0	0.41	0.36	0.39	0.36	0.31	0.01	0	E	E	0	0
26	0	0.39	0.31	0.44	0.31	0.36	<0.01	0	E	E	0	0
27	0	0.31	0.36	0.47	0.34	0.34	<0.01	0	E	E	0	0
28	0.08	0.29	0.31	0.39	0.29	0.31	<0.01	0	E	E	0	0
29	0.18	0.53	0.29	0.36	0.34	0.34	<0.01	0	E	E	0	0
30	0.20	0.39	0.31	0.36		0.36	<0.01	0	E	E	0	0
31	0.18		0.36	0.34		0.25		0		E	0	

*E = Equipment malfunction.

E059.8 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.51	8.5	13	14	13	14	3.2	0.01	E*	E	0	0	67
Max Daily Peak (ft^3/s)	0.20	0.53	0.50	0.50	0.50	0.67	0.44	0	E	E	0	0	0.67
Min Daily Peak (ft^3/s)	0	0	0.04	0.04	0.05	0.06	0	0	0	E	0	0	0
Missing Days	0	0	0	0	0	0	0	0	27	31	6	0	64

*E = Equipment malfunction.

E060.1 Pueblo Canyon below Grade Control Structure

Location. Lat 35° 52’ 17”, Long –106° 12’ 53”, NE ¼, Sec. 20, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 8.30 mi^2.

Period of Record. April 15, 2010, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6329 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 30 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1400 ft^3/s, September 13, 2013, gage height 6.23 ft.

Maximum Discharge for WY 2018. Maximum discharge, 0.25 ft^3/s, February 11, 2020, gage height 0.92 ft.

E060.1 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, a shaft encoder float system, a Milltronics sonic probe mounted on an arm above the channel was replace by an OTT RLS radar sensor on February 22, 2018, and a Sutron Accubar air-purge bubble sensor, housed in a NEMA shelter. The shelter is secured atop a stilling well, a vertical 2.5-ft-diameter corrugated metal culvert pipe. An outside staff gage is available for reference. A trapezoidal supercritical flume with a 1-ft-wide throat controls flow through the gaging station reach. No provision has been made for direct discharge measurements above the wading stage.

Two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples are triggered by stage through the data logger. The station is powered by a solar-panel battery system. The samplers and batteries are in a 3- × 4-ft steel storage box, separate from the other instrumentation. A line-of-sight radio transceiver provides 5-min stage data from the encoder, radar, and bubbler.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 27–29, 2019; and January 16–22, 2020 when the gage was affected by ice.

Rating. Rating No. 1 is based on precalibrated data for the flume used (Kilpatrick and Schneider 1983) and was used throughout the period.

No discharge measurements were taken during the year.

Discharge. Discharge was computed by directly applying Rating No. 1 for the entire water year.

E060.1 Daily Peak Discharge WY 2020 (ft^3/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0.11	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0.22	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0.04
9	0	0	0	0	0	0	0	0	0	0	0	0.22
10	0	0	0	0.08	0	0	0	0	0	0	0	0
11	0	0	0	0	0.25	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0.22	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	I*	0	0	0	0	0	0.11	0	0
17	0	0	0	I	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0.18	0	0	0	0	0	0
19	0	0	0	I	0	0.08	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0.04	0	I	0	0	0	0	0	0.18	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0.22	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	I	0	0	0	0	0	0	0	0	0	0
28	0	I	0	0	0	0	0	0	0	0	0	0
29	0	I	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0		0	0	0.08	0	0	0	0
31	0		0	0		0		0		0	0	

*I = Ice or snow present in channel.

E060.1 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0	0	0	0.02	0.02	0	0	0	0.01	0	0.01	0.06
Max Daily Peak (ft^3/s)	0.22	0.04	0	0	0	0	0	0.08	0.00	0.18	0	0.22	0.22
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	3	0	7	0	0	0	0	0	0	0	0	0

Sandia Watershed

The Sandia Canyon and Mortandad Canyon watersheds are located within the central part of LANL. The Sandia watershed heads on LANL property within Technical Area 03 (TA-03) at an elevation of approximately 7300 ft and trends east-southeast across LANL property, Bandelier National Monument, and Pueblo de San Ildefonso. Sandia Canyon empties into the Rio Grande in White Rock Canyon at an elevation of 5450 ft. The area of the Sandia watershed is approximately 5.5 mi^2. There are no significant tributaries to the Sandia watershed. Perennial stream flow occurs in the upper and middle portions of the canyon system as a result of sanitary wastewater and cooling tower effluent discharge to the canyon from operating facilities. The only known perennial spring in the watershed (Sandia Spring) is located in lower Sandia Canyon near the Rio Grande. The Sandia watershed contains, or may influence, eight wetland areas totaling approximately 5.39 acres.

Figure 4 shows the total monthly volume of discharge for the five stream gaging stations within Sandia watershed. Station E123 is located downstream of the Sandia wetland. Gaging stations E121 and E122 both discharge into the wetland. Station E121 is directly downstream from the power plant and receives a constant or nearly constant base flow from the power plant. Station E124 is located in lower Sandia Canyon, adjacent to East Jemez Road. Station E125 is located near the edge of LANL property at the intersection of East Jemez Road and NM 4. Both E124 and E125 rarely have flow. Variations within the discharge are the result of the precipitation events throughout the monsoon season or a change in the volume of effluent from the cooling tower.

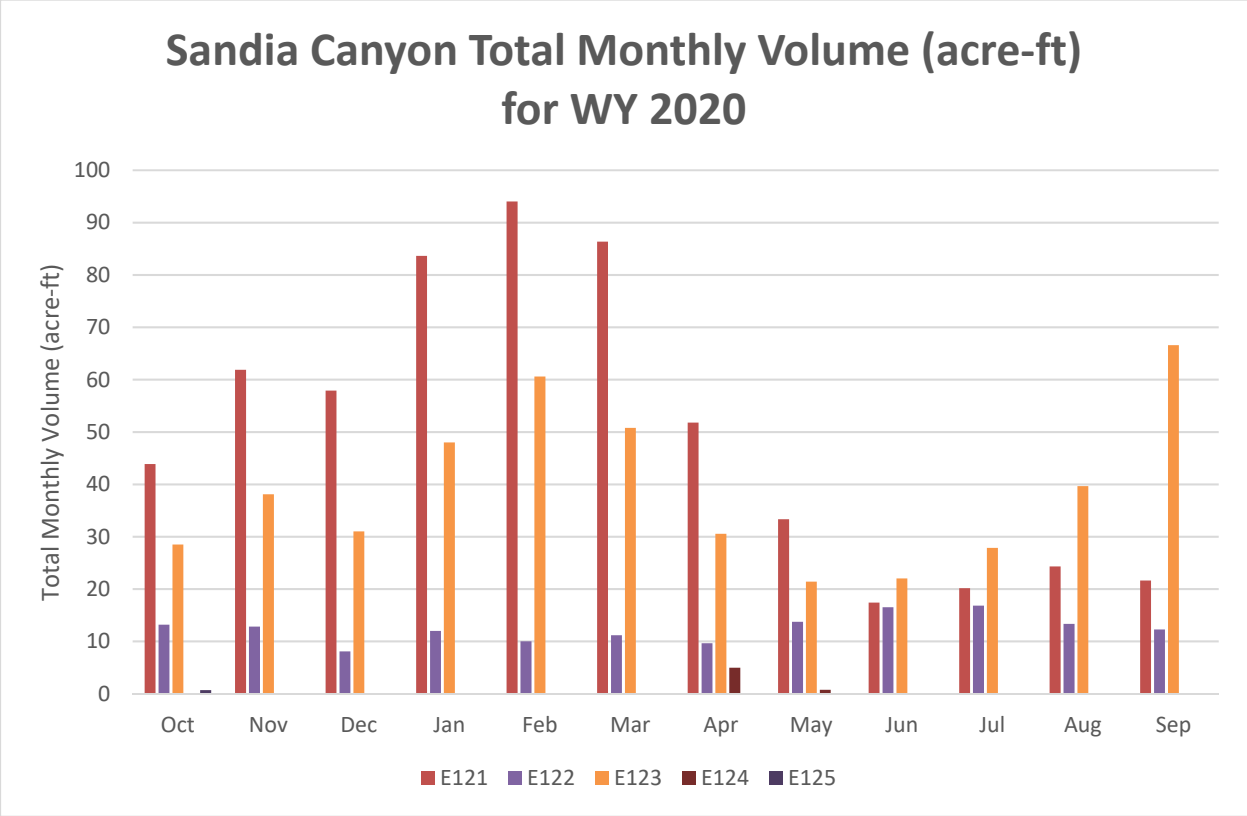


Figure 4 The total monthly volume (acre-ft) for WY 2020 for Sandia Canyon

E121 Sandia Canyon Right Fork at Power Plant

Location. Lat 35° 52’ 31”, Long –106° 19’ 7”, SW ¼, Sec. 16, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.08 mi^2.

Period of Record. October 1, 2006, to September 30, 2020.

Revised Record. Period of record (2008).

Gage. Data logger with radio telemetry. Elevation of gage is 7280 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 412 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 191 ft^3/s, June 21, 2002, from peak-flow computation, gage height 7.62 ft.

Maximum Discharge for WY 2020. Maximum discharge, 22 ft^3/s, August 2, 2020, gage height 6.56 ft.

E121 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples. The ISCO samplers are housed in a separate shelter, a 3- × 4-ft metal box. The samplers are triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. The channel is straight for about 30 ft with a steep upstream slope and straight for 50 ft downstream with a sharp slope. The streambed through this reach consists primarily of sand, gravel, and cobbles, more so below the gaging station. The low-water control is a bedrock riffle below the gaging station.

Rating No. 5 was developed based on previous measurements.

One discharge measurement was made during the year.

Discharge. Discharge was computed by applying Rating No. 5.

E121 Daily Max Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.64	1.8	2.7	1.1	2.1	1.7	1.5	0.86	0.64	0.29	20	0.39
2	0.48	1.8	2.6	1.7	2.0	2.0	1.5	0.90	0.29	0.43	22	0.39
3	0.50	1.7	2.2	1.7	2.0	2.0	1.5	0.90	0.23	0.43	3.0	0.39
4	17	1.6	2.1	1.5	2.0	1.8	1.5	1.0	0.34	0.46	0.37	0.39
5	0.80	1.3	2.1	1.5	2.0	1.8	1.5	0.81	0.34	3.0	0.37	0.35
6	0.72	1.7	1.7	1.2	1.8	1.7	1.4	1.0	2.0	0.48	0.61	0.35
7	0.64	1.5	1.7	1.5	2.0	1.9	1.3	0.77	0.44	0.50	0.48	0.35
8	0.60	1.6	2.2	2.1	2.0	1.8	1.2	0.77	0.39	0.43	0.53	1.3
9	1.2	1.6	1.7	2.1	2.0	1.7	1.3	0.81	0.39	0.43	0.46	1.5
10	1.2	1.3	1.2	1.6	2.0	1.6	1.2	0.81	0.48	0.43	0.44	0.68
11	1.0	1.3	1.4	1.7	2.7	1.5	1.3	1.9	0.37	0.35	0.44	0.23
12	0.89	1.4	1.4	1.7	1.9	1.5	1.3	0.90	0.37	0.34	0.46	0.43
13	0.38	1.7	1.7	1.7	2.0	14	2.1	1.0	0.35	0.35	0.48	0.46
14	0.37	1.8	1.7	1.7	2.0	1.5	2.5	0.90	16	0.35	0.48	0.44
15	0.37	1.8	1.6	1.8	2.4	1.5	1.5	0.86	0.43	0.44	0.61	0.48
16	0.84	1.8	1.1	1.7	2.3	1.7	1.5	0.77	0.44	0.48	0.68	0.48
17	1.0	1.7	2.1	2.5	2.0	1.6	1.1	0.77	0.48	1.3	0.57	0.46
18	1.1	0.83	1.6	1.8	1.9	5.1	0.95	0.77	0.43	3.5	0.39	0.44
19	0.99	0.70	1.5	2.0	1.5	5.7	0.77	0.46	0.39	0.48	0.13	0.44
20	0.89	3.5	1.5	1.5	1.7	1.5	0.72	0.43	0.37	0.41	0.34	0.39
21	0.94	4.5	1.2	1.6	1.6	1.6	1.3	0.68	0.37	0.39	0.32	0.44
22	0.84	1.9	0.5	2.0	2.8	1.5	1.2	0.86	0.37	0.44	0.32	0.37
23	1.1	1.8	1.5	2.4	2.8	1.5	1.2	0.57	0.72	0.46	0.34	0.35
24	1.0	1.7	1.4	2.5	2.7	1.9	1.2	0.37	0.48	0.86	0.34	0.50
25	1.1	2.0	1.5	2.0	2.1	1.7	1.1	1.3	12	0.90	0.39	0.50
26	1.1	2.0	1.4	2.1	1.7	1.7	0.50	0.41	0.50	1.1	0.53	0.50
27	1.3	1.8	1.7	2.2	2.5	1.6	0.81	0.77	0.50	2.3	0.39	0.44
28	1.9	1.5	1.6	2.5	2.4	2.0	0.95	1.0	0.48	1.5	5.66	0.29
29	1.8	9.0	1.1	2.6	1.9	2.1	1.1	9.6	0.48	0.39	0.48	0.37
30	1.7	2.0	1.1	2.5		2.4	0.90	1.1	0.41	0.37	0.39	0.53
31	1.8		1.1	2.0		1.5		1.0		0.44	0.39	

E121 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	44	62	58	84	94	86	52	33	17	20	24	22	596
Max Daily Peak (ft^3/s)	17	9.0	2.7	2.6	2.8	14	2.5	9.6	16	3	22	2	22
Min Daily Peak (ft^3/s)	0.22	0.04	0.02	0.29	0.26	0.96	0.30	0.24	0.08	0.02	0.04	0.07	0.01
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

E121 Daily Mean Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.47	1.4	1.2	0.52	1.7	1.4	1.2	0.66	0.20	0.19	0.63	0.37
2	0.40	1.1	1.2	0.94	1.7	1.5	1.2	0.68	0.14	0.21	0.76	0.36
3	0.42	1.4	1.2	1.2	1.7	1.5	1.2	0.69	0.14	0.34	0.44	0.36
4	1.8	0.98	1.6	1.1	1.7	1.5	1.1	0.63	0.15	0.34	0.29	0.37
5	0.58	0.75	1.6	0.94	1.2	1.5	1.1	0.56	0.21	0.37	0.34	0.34
6	0.51	1.0	1.4	0.74	1.5	1.4	0.94	0.57	0.42	0.34	0.36	0.34
7	0.47	1.0	1.3	0.80	1.7	1.4	0.83	0.55	0.33	0.37	0.41	0.34
8	0.46	1.2	1.2	1.2	1.6	1.5	0.89	0.54	0.23	0.20	0.46	0.40
9	0.85	1.1	0.83	1.6	1.7	1.5	0.89	0.55	0.19	0.24	0.43	0.55
10	0.91	0.88	0.86	1.2	1.7	1.3	0.90	0.58	0.26	0.33	0.42	0.28
11	0.79	0.85	0.93	1.2	1.8	1.2	0.89	0.55	0.25	0.33	0.43	0.09
12	0.40	0.87	1.0	1.2	1.6	1.2	0.88	0.54	0.24	0.31	0.43	0.38
13	0.28	1.1	1.2	1.2	1.6	2.3	1.2	0.64	0.23	0.32	0.45	0.43
14	0.28	1.3	1.4	1.3	1.7	1.1	1.4	0.62	0.46	0.33	0.47	0.43
15	0.28	1.5	0.81	1.4	1.8	1.1	1.2	0.59	0.32	0.37	0.52	0.44
16	0.49	1.5	0.49	1.4	1.8	1.2	0.90	0.58	0.30	0.43	0.58	0.46
17	0.79	0.89	0.69	1.5	1.8	1.3	0.70	0.58	0.29	0.49	0.36	0.44
18	0.79	0.53	0.74	1.4	1.5	1.7	0.61	0.48	0.29	0.50	0.28	0.42
19	0.76	0.45	1.1	1.3	1.2	1.8	0.49	0.37	0.27	0.43	0.09	0.40
20	0.64	1.3	0.92	0.94	1.3	1.2	0.46	0.34	0.26	0.38	0.19	0.35
21	0.61	1.8	0.55	1.0	1.3	1.3	0.66	0.39	0.26	0.36	0.30	0.32
22	0.55	0.94	0.39	1.3	1.6	1.2	0.85	0.47	0.27	0.41	0.30	0.32
23	0.72	0.79	0.73	1.6	1.6	1.2	0.93	0.40	0.36	0.34	0.32	0.34
24	0.70	0.88	0.92	1.9	2.0	1.3	0.93	0.30	0.39	0.14	0.31	0.36
25	0.74	1.1	0.97	1.7	1.8	1.3	0.71	0.32	0.57	0.15	0.36	0.48
26	0.78	0.97	0.87	1.7	1.5	1.3	0.39	0.30	0.40	0.15	0.37	0.46
27	0.81	0.65	0.79	1.7	1.8	1.3	0.51	0.37	0.40	0.36	0.36	0.24
28	0.99	0.63	0.72	2.1	1.8	1.5	0.66	0.68	0.38	0.41	0.49	0.19
29	1.2	1.6	0.59	2.4	1.5	1.8	0.75	0.85	0.35	0.37	0.37	0.28
30	1.4	0.73	0.56	1.9		1.5	0.69	0.73	0.23	0.32	0.37	0.37
31	1.2		0.57	1.7		1.2		0.70		0.36	0.37	

E122 Sandia Canyon near Roads and Grounds at TA-03

Location. Lat 35° 52’ 31”, Long –106° 9’ 6”, SW ¼, Sec. 16, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.08 mi^2.

Period of Record. October 1, 2006, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 7288 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 76 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 18 ft^3/s, September 13, 2013, gage height 3.03 ft.

Maximum Discharge for WY 2020. Maximum discharge, 5.8 ft^3/s, August 2, 2020, gage height 1.73 ft.

E122 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and an MDS 4710 radio transceiver. A Milltronics sonic probe was used to determine stream water height until November 29, 2016, when a VegaPul WL 61 radar sensor was installed. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is also equipped with two ISCO pump sampler to collect water-quality samples (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler). The ISCO samplers are housed in a separate shelter, a 3- × 4-ft metal box. The samplers are triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

Datum Correction. None. The levels of July 25, 2005, found the gage to be within limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except December 10–11, 2019 when the equipment malfunctioned; January 17, 2020; February 11 and 23–24, 2020 when the gage was affected by snow and ice.

Rating. The channel is straight for about 20 ft above the gaging station with a steep downstream slope and straight for 15 ft downstream with a sharp slope 5 ft downstream. The streambed through this reach is primarily bedrock with some cobbles below the gaging station. The low-water control is a bedrock riffle below the gage.

Rating No. 2 was developed based on past measurements.

No discharge measurement was made during the year.

Discharge. Discharge was computed from Rating No. 2.

E122 Daily Max Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.29	0.29	0.37	0.21	0.30	0.27	0.24	0.26	0.44	0.34	5.0	0.29
2	0.27	0.29	0.49	0.20	0.32	0.29	0.24	0.26	0.44	0.34	5.8	0.29
3	0.32	0.27	0.45	0.20	0.30	0.29	0.25	0.27	0.45	0.42	2.2	0.27
4	5.1	0.27	0.29	0.21	0.34	0.29	0.24	0.27	0.39	0.45	0.25	0.29
5	0.33	0.29	0.69	0.25	0.29	0.29	0.25	0.26	0.37	2.4	0.24	0.27
6	0.25	0.27	0.34	0.23	0.34	0.27	0.25	0.22	2.2	0.36	0.24	0.27
7	0.20	0.30	0.33	0.22	0.44	0.29	0.25	0.22	0.37	0.36	0.24	0.26
8	0.21	0.29	1.0	0.21	0.34	0.34	0.25	0.73	0.39	0.36	0.23	1.7
9	0.21	0.29	0.67	0.21	0.34	0.27	0.25	0.23	0.34	0.37	0.21	1.9
10	0.22	0.29	E[a]	0.36	0.47	0.29	0.25	0.24	0.34	0.36	0.27	0.73
11	0.21	0.29	E	0.34	I[b]	0.29	0.25	0.95	0.34	0.37	0.29	0.32
12	0.21	0.29	0.33	0.34	0.37	0.27	0.24	0.24	0.33	0.39	0.30	0.29
13	0.21	0.29	0.33	0.34	0.36	3.7	0.56	0.24	0.34	0.39	0.30	0.27
14	0.21	0.29	0.32	0.29	0.44	0.26	0.67	0.24	5.32	0.37	0.32	0.30
15	0.22	0.27	0.29	0.29	0.56	0.25	0.25	0.24	0.33	0.40	0.32	0.32
16	0.22	0.26	0.29	0.36	0.36	0.25	0.25	0.25	0.32	0.36	0.29	0.29
17	0.22	0.19	0.29	I	0.36	0.25	0.25	0.24	0.32	2.6	0.30	0.33
18	0.22	0.19	0.29	0.39	0.33	1.7	0.25	0.24	0.32	2.1	0.33	0.32
19	0.22	0.16	0.29	0.37	0.33	1.8	0.24	0.24	0.33	0.33	0.30	0.33
20	0.24	3.2	0.29	0.37	0.33	0.30	0.24	0.32	0.47	0.32	0.30	0.47
21	0.24	1.9	0.29	0.49	0.32	0.32	0.25	0.33	0.32	0.32	0.29	0.30
22	0.22	0.33	0.29	0.47	I	0.24	0.25	0.34	0.33	0.33	0.30	0.32
23	0.27	0.32	0.29	0.45	I	0.24	0.25	0.33	0.80	0.30	0.27	0.29
24	0.27	0.26	0.36	0.47	0.30	0.24	0.25	0.33	0.37	1.3	0.27	0.27
25	0.27	0.22	0.47	0.47	0.30	0.25	0.25	0.54	4.55	1.0	0.27	0.27
26	0.29	0.21	0.29	0.47	0.30	0.24	0.25	0.34	0.36	1.2	0.76	0.27
27	0.27	0.21	0.58	0.37	0.30	0.23	0.25	0.33	0.33	2.1	0.27	0.27
28	0.88	0.24	0.47	0.36	0.27	0.23	0.26	0.34	0.33	1.2	4.5	0.27
29	0.29	3.6	0.23	0.34	0.27	0.23	0.26	3.8	0.32	0.34	0.37	0.29
30	0.29	0.30	0.24	0.71		0.23	0.26	1.0	0.78	0.33	0.29	0.29
31	0.29		0.25	0.34		0.07		0.44		0.34	0.26	

[a] E = Equipment malfunction.

[b] I = Ice or snow present in channel.

E122 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	13	13	8	12	10	11	9.6	14	17	17	13	12	150
Max Daily Peak (ft^3/s)	5.1	3.6	1.0	0.71	0.56	3.7	0.67	3.8	5.3	2.6	5.8	1.9	5.8
Min Daily Peak (ft^3/s)	0.07	0.06	0.04	0.04	0.04	0.04	0.04	0.07	0.08	0.07	0.05	0.05	0.04
Missing Days	0	0	2	1	3	0	0	0	0	0	0	0	6

E122 Daily Mean Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.21	0.18	0.21	0.19	0.21	0.16	0.13	0.19	0.28	0.25	0.35	0.18
2	0.21	0.18	0.24	0.18	0.22	0.17	0.16	0.19	0.28	0.27	0.37	0.19
3	0.22	0.18	0.24	0.19	0.21	0.16	0.15	0.19	0.29	0.27	0.29	0.20
4	0.85	0.19	0.22	0.19	0.22	0.17	0.15	0.19	0.29	0.27	0.20	0.20
5	0.21	0.18	0.28	0.20	0.20	0.17	0.15	0.19	0.30	0.36	0.19	0.20
6	0.20	0.17	0.21	0.20	0.21	0.17	0.15	0.20	0.44	0.27	0.19	0.20
7	0.19	0.18	0.18	0.20	0.22	0.17	0.16	0.20	0.28	0.29	0.20	0.19
8	0.20	0.19	0.38	0.19	0.22	0.17	0.16	0.21	0.28	0.30	0.20	0.30
9	0.19	0.19	0.25	0.19	0.21	0.17	0.15	0.20	0.14	0.30	0.20	0.55
10	0.19	0.19	E[a]	0.23	0.22	0.17	0.16	0.21	0.25	0.31	0.20	0.28
11	0.19	0.17	E	0.20	I[b]	0.16	0.15	0.23	0.27	0.32	0.20	0.18
12	0.19	0.18	0.20	0.20	0.23	0.16	0.15	0.21	0.28	0.33	0.21	0.19
13	0.19	0.19	0.20	0.20	0.22	0.68	0.24	0.22	0.28	0.32	0.21	0.18
14	0.20	0.18	0.20	0.21	0.24	0.15	0.22	0.23	0.43	0.30	0.20	0.17
15	0.20	0.19	0.19	0.20	0.25	0.14	0.16	0.21	0.25	0.27	0.19	0.19
16	0.19	0.18	0.19	0.22	0.22	0.14	0.16	0.22	0.25	0.24	0.19	0.20
17	0.20	0.18	0.19	I	0.22	0.15	0.16	0.22	0.25	0.28	0.17	0.19
18	0.20	0.17	0.19	0.22	0.21	0.31	0.16	0.21	0.25	0.27	0.19	0.19
19	0.19	0.10	0.20	0.21	0.21	0.41	0.15	0.22	0.26	0.22	0.21	0.19
20	0.21	0.34	0.20	0.21	0.20	0.16	0.16	0.23	0.27	0.23	0.21	0.19
21	0.20	0.50	0.20	0.26	0.18	0.16	0.16	0.22	0.26	0.23	0.20	0.19
22	0.20	0.23	0.20	0.26	I	0.15	0.16	0.23	0.26	0.23	0.20	0.18
23	0.19	0.21	0.20	0.23	I	0.15	0.16	0.22	0.28	0.22	0.20	0.19
24	0.17	0.20	0.21	0.24	0.18	0.15	0.17	0.23	0.26	0.24	0.19	0.18
25	0.17	0.20	0.23	0.24	0.18	0.15	0.17	0.23	0.41	0.25	0.21	0.20
26	0.18	0.19	0.20	0.23	0.18	0.15	0.17	0.24	0.26	0.28	0.20	0.18
27	0.19	0.19	0.26	0.22	0.17	0.15	0.17	0.24	0.25	0.32	0.20	0.19
28	0.24	0.21	0.25	0.22	0.16	0.14	0.18	0.24	0.25	0.29	0.37	0.17
29	0.17	0.64	0.20	0.21	0.16	0.14	0.17	0.35	0.25	0.24	0.20	0.18
30	0.17	0.20	0.21	0.22		0.11	0.18	0.30	0.26	0.26	0.19	0.19
31	0.17		0.21	0.21		0.05		0.27		0.24	0.19	

[a] E = Equipment malfunction.

[b] I = Ice or snow present in channel.

E123 Sandia Canyon below Wetlands

Location. Lat 35° 52’ 23”, Long –106° 18’ 35”, SE ¼, Sec. 16, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.29 mi^2.

Period of Record. August 1, 1999, to September 30, 2020.

Revised Record. Drainage area (2006); Section (2007).

Gage. Data logger with radio telemetry. Elevation of gage is 7201 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 521 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge 110 ft^3/s, September 13, 2013, gage height 4.86 ft.

Maximum Discharge for WY 2018. Maximum discharge, 19 ft^3/s, October 4, 2020, gage height 2.31 ft.

E123 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is also equipped with two ISCO pump samplers (one 12-count 1-L glass and/or polyethylene bottle sampler and one 24-count 1-L polyethylene bottle sampler) to collect water-quality samples. The ISCO samplers are housed in a separate shelter, a 3- × 4-ft steel storage box. The samplers are triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

An auxiliary 6-in. Parshall flume, located downstream from E123, is used to verify the low-flow record.

Datum Correction. None; the levels run June 27, 2008, were found to be within limits.

Gage-Height Record. The data logger referenced to the inside gage height gave a complete and satisfactory record, except December 1, 18–21, 30–31, 2019; and January 2–4, 8–9, 2020, when the gage was affected by snow and ice.

Rating. The channel is trapezoidal with a rock outcrop and small depositional bars within pools. The banks have some grass, not very tall or thick. The channel is straight for about 100 ft above and below the gaging station. Rating No.5 was developed based on low-flow measurements and point-of-zero flow measurements during the water year and a slope-area measurement high flow in 2005.

No discharge measurement was made during the year.

Discharge. Discharge was computed from Rating No. 5.

E123 Daily Max Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.32	0.80	I*	2.4	1.2	0.90	0.60	0.60	0.40	0.10	10	1.1
2	0.26	0.80	1.9	I	1.2	1.2	0.60	0.60	0.40	0.14	14	1.0
3	0.26	0.90	1.4	I	1.3	1.1	0.53	0.60	0.32	0.53	2.8	1.1
4	19	0.90	1.1	I	1.4	1.0	0.53	0.60	0.26	0.70	0.53	1.1
5	0.60	0.53	1.8	1.9	1.1	1.0	0.60	0.46	0.40	3.4	0.46	1.1
6	0.40	0.80	1.0	0.60	1.3	0.80	0.53	0.46	3.9	0.70	0.53	1.1
7	0.26	0.60	0.90	1.8	1.4	1.0	0.46	0.40	0.60	0.60	0.70	1.1
8	0.26	0.70	2.1	I	1.1	1.0	0.46	0.53	0.53	0.60	0.80	2.1
9	0.80	0.70	2.8	I	1.2	1.0	0.53	0.46	0.26	0.70	0.60	4.6
10	0.80	0.46	0.70	0.90	1.1	0.90	0.53	0.46	0.60	0.70	0.60	2.8
11	0.70	0.46	0.70	0.80	2.4	0.80	0.53	1.1	0.46	0.60	0.60	0.53
12	0.53	0.40	0.70	0.80	1.1	0.70	0.53	0.46	0.40	0.53	0.60	1.3
13	0.09	0.70	0.90	0.80	1.2	18	1.3	0.53	0.40	0.53	0.60	1.5
14	0.09	0.90	1.0	0.90	1.4	0.80	2.0	0.53	11	0.53	0.70	1.4
15	0.40	0.90	0.90	0.90	1.7	0.70	0.80	0.46	0.70	0.46	0.80	1.6
16	0.46	0.90	0.32	1.0	1.5	0.80	0.80	0.40	0.46	0.53	0.80	1.7
17	0.70	0.70	2.80	2.0	1.4	0.80	0.46	0.40	0.32	1.4	0.80	1.6
18	0.70	0.14	I	1.0	1.2	5.1	0.46	0.40	0.32	2.9	0.60	1.6
19	0.70	0.10	I	1.0	1.0	7.6	0.40	0.14	0.32	0.70	0.40	1.5
20	0.60	4.6	I	0.60	1.0	0.70	0.40	0.09	0.32	0.53	0.53	1.3
21	0.40	4.4	0.70	1.0	0.90	0.80	0.80	0.40	0.26	0.53	0.60	1.2
22	0.40	1.2	0.32	1.3	1.8	0.60	0.90	0.46	0.32	0.60	0.60	1.2
23	0.46	0.90	0.80	1.7	3.5	0.53	1.0	0.32	1.1	0.70	0.60	1.2
24	0.46	0.90	0.80	1.9	2.0	0.70	0.90	0.10	0.53	1.0	0.60	1.3
25	0.46	1.1	1.1	1.4	1.6	0.70	0.90	0.60	8.53	1.1	0.90	1.8
26	0.53	1.0	0.70	1.4	1.1	0.70	0.32	0.32	0.70	1.8	1.3	1.9
27	0.53	0.90	1.4	1.3	1.6	0.70	0.53	0.46	0.60	2.5	0.90	1.7
28	1.4	0.53	1.1	1.9	1.5	1.1	0.70	0.70	0.60	2.8	5.3	0.90
29	0.90	13	0.90	1.9	1.0	1.3	0.90	4.6	0.60	0.90	1.5	1.2
30	0.80	1.2	I	1.9		1.2	0.70	0.80	0.40	0.80	1.1	1.9
31	0.80		I	1.1		0.46		0.60		0.80	1.1	

*I = Ice or snow present in channel.

E123 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	29	38	31	48	61	51	31	21	22	28	40	67	465
Max Daily Peak (ft^3/s)	19	13	2.8	2.4	3.5	18	2.0	4.6	11	3.4	14	4.6	19
Min Daily (ft^3/s)	0.06	0.07	0.07	0.40	0.60	0.32	0.10	0.05	0.06	0	0.01	0.14	0
Missing Days	0	0	6	5	0	0	0	0	0	0	0	0	11

E123 Daily Mean Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.26	0.65	I*	1.2	1.0	0.77	0.48	0.52	0.31	0.07	1.2	0.89
2	0.15	0.53	1.1	I	1.1	0.87	0.52	0.51	0.18	0.10	1.5	0.89
3	0.17	0.72	0.67	I	1.1	0.87	0.50	0.51	0.19	0.36	0.89	0.86
4	3.0	0.62	0.77	I	1.1	0.82	0.48	0.46	0.18	0.45	0.33	0.93
5	0.39	0.26	1.05	1.2	0.92	0.79	0.50	0.36	0.25	0.66	0.36	0.88
6	0.28	0.48	0.77	0.52	1.1	0.72	0.42	0.38	0.90	0.40	0.37	0.90
7	0.20	0.48	0.74	0.62	1.0	0.76	0.28	0.35	0.48	0.52	0.47	0.88
8	0.23	0.52	1.0	I	1.0	0.89	0.38	0.36	0.32	0.30	0.62	0.99
9	0.53	0.51	0.85	I	1.0	0.85	0.40	0.36	0.11	0.16	0.55	2.4
10	0.66	0.35	0.51	0.73	1.0	0.75	0.46	0.39	0.27	0.47	0.56	1.4
11	0.60	0.29	0.57	0.67	1.3	0.65	0.46	0.43	0.33	0.47	0.53	0.36
12	0.28	0.25	0.60	0.71	0.95	0.57	0.45	0.30	0.32	0.47	0.53	0.94
13	0.09	0.39	0.67	0.67	0.99	3.1	0.83	0.44	0.30	0.44	0.49	1.3
14	0.09	0.62	0.86	0.74	1.1	0.70	1.0	0.45	0.90	0.43	0.56	1.3
15	0.09	0.76	0.58	0.79	1.2	0.60	0.68	0.38	0.46	0.40	0.57	1.4
16	0.23	0.76	0.15	0.81	1.2	0.58	0.57	0.37	0.34	0.40	0.71	1.5
17	0.59	0.45	0.53	1.1	1.2	0.72	0.39	0.38	0.26	0.62	0.65	1.4
18	0.62	0.11	I	0.81	0.97	1.1	0.38	0.23	0.24	0.71	0.51	1.3
19	0.57	0.09	I	0.76	0.80	2.1	0.30	0.09	0.20	0.53	0.14	1.3
20	0.46	0.86	I	0.48	0.87	0.56	0.30	0.08	0.21	0.46	0.16	1.1
21	0.35	1.8	0.44	0.61	0.80	0.59	0.39	0.14	0.18	0.42	0.44	0.97
22	0.30	0.91	0.19	0.74	0.97	0.51	0.70	0.31	0.19	0.51	0.47	0.94
23	0.35	0.60	0.39	1.0	1.4	0.47	0.83	0.23	0.42	0.54	0.47	1.0
24	0.36	0.56	0.63	1.3	1.4	0.53	0.83	0.08	0.49	0.24	0.47	1.1
25	0.34	0.71	0.69	1.1	1.2	0.58	0.67	0.13	1.0	0.23	0.63	1.6
26	0.40	0.86	0.59	1.0	0.85	0.61	0.22	0.11	0.57	0.30	0.79	1.6
27	0.41	0.69	0.67	1.0	1.1	0.58	0.31	0.13	0.48	0.51	0.80	0.99
28	0.58	0.41	0.58	1.3	1.2	0.67	0.50	0.51	0.45	1.1	1.3	0.54
29	0.51	2.1	0.49	1.7	0.84	1.1	0.60	0.82	0.41	0.68	1.1	0.84
30	0.63	0.81	I	1.4		0.84	0.59	0.51	0.20	0.56	0.96	1.1
31	0.62		I	1.0		0.42		0.46		0.59	0.94	

*I = Ice or snow present in channel.

E124 Sandia above Firing Range

Location. Lat 35° 51’ 54.90” N, Long -106° 15’ 46.36” W, Zone 13S, NM23, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 1.14 mi^2.

Period of Record. October 1, 2013, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6736 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 7 yr, 5 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge 50 ft^3/s, July 31, 2014, gage height 2.2 ft.

Maximum Discharge for WY 2018. Maximum discharge 2.2 ft^3/s, May 28, 2020, gage height 1.22 ft.

E124 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor, which was replaced on February 20, 2020 with an OTT RLS radar sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except January 23–31, 2020; February 1–29, 2020, and March 1–13, 2020, when the gage was affected by ice and snow; and February 19–20, 2020 when maintenance was performed.

Rating. Rating No. 2 was developed based on slope-area computations and discharge measurements.

There were no discharge measurements made this year.

Discharge. Discharge was computed from Rating No. 2

E124 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	I*	I	0	0	0	0	0	0
2	0	0	0	0	I	I	0	0	0	0	0	0
3	0	0	0	0	I	I	0	0	0	0	0	0
4	0.55	0	0	0	I	I	0.46	0	0	0	0	0
5	0	0	0	0	I	I	0.46	0	0	0	0	0
6	0	0	0	0	I	I	0.82	0	1.6	0	0	0
7	0	0	0	0	I	I	0.82	0	0	0	0	0
8	0	0	0	0	I	I	0.55	0	0	0	0	0
9	0	0	0	0	I	I	0.55	0	0	0	0	0
10	0	0	0	0.82	I	I	0.18	0	0	0	0	0
11	0	0	0	0	I	I	0.36	0	0	0	0	0
12	0	0	0	0	I	I	0.36	0	0	0	0	0
13	0	0	0	0	I	I	0.46	0	0	0	0	0
14	0	0	0	0	I	0	1.8	0	0	0	0	0
15	0	0	0	0	I	0	0.46	0	2.2	0	0	0
16	0	0	0	0	I	0	0	0	0	0	0	0
17	0	0	0	0	I	0	0	0	0	0	0	0
18	0	0	0	0	I	0	0	0	0	0.73	0	0
19	0	0	0	0	T	0.73	0	0	0	0	0	0
20	0	0	0	0	T	0	0	0	0	0.64	0	0
21	0	0	0	0	I	0	0	0	0	0	0	0
22	0	0	0	0.09	I	0	0	0	0	0	0	0
23	0	0	0	I	I	0	0	0	0.73	0	0	0
24	0	0	0	I	I	0	0	0	0	0	0	0
25	0	0	0	I	I	0	0	0	0	0	0	0
26	0	0	0	I	I	0	0	0	0	0	0	0
27	0	0	0	I	I	0	0	0.82	0	0	0	0
28	0	0	0	I	I	0	0	2.2	0	0	0	0
29	0	0	0	I	I	0	0	0	0	0	0	0
30	0	0	0	I		0	0	2	0	0	0	0
31	0		0	I		0		0		0	0	

*I = Ice or snow present in channel.

E124 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0	0	0.14	I*	0.03	5.0	0.75	0.11	0.08	0	0	6
Max Daily Peak (ft^3/s)	0.55	0	0	0.82	I	0.73	1.8	2.2	2.2	0.73	0	0	2.2
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	9	29	13	0	0	0	0	0	0	51

*I = Ice or snow present in channel.

E125 Sandia Canyon above SR 4

Location. Lat 35° 51’ 32”, Long –106° 13’ 34”, SW ¼, Sec. 20, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 2.05 mi^2.

Period of Record. October 1, 1994, to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6495 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 2 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 104 ft^3/s, September 13, 2013, gage height 5.08 ft.

Maximum Discharge for WY 2018. Maximum discharge, 2.0 ft^3/s, October 25, 2019, gage height 1.26 ft.

E125 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system, until it was replaced on September 24, 2019, with an OTT RLS radar sensor. The system is powered by a solar-panel battery system. All equipment is housed in a NEMA shelter on an 18-in. CMP well. The station is equipped with an ISCO pump sampler (12-count 1-L glass and polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. The control is a concrete broad-crested weir. No provision has been made for measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. The channel is straight for 150 ft above and 100 ft below the gaging station. The bed material is sand with vegetation on the banks, and the bottom is well supported.

Rating No. 2 was developed and applied beginning October 1, 2009, to account for 1 ft of channel aggradation along the reach. The channel slopes smoothly through the reach, replacing the broad-crested concrete weir as the control. The rating was computed using Manning's equation and measured channel characteristics of the 2-ft point of zero flow (PZF) to top of weir walls at 3.20 ft. Greater flow will require the extension of Rating No. 2 with a more detailed channel survey.

No discharge measurements were made during the year.

Discharge. Discharge was directly computed from Rating No. 2.

E125 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.02	0	0	0.03	0	0	0	0	0	0	0
2	0.03	0.05	0	0	0.03	0	0	0	0	0	0	0
3	0.03	0.02	0.11	0	0	0	0	0	0	0	0	0
4	0.28	0.02	0	0	0	0	0	0	0	0	0	0
5	0.11	0	0	0	0	0	0	0	0	0	0	0
6	0.06	0	0	0	0.03	0	0	0	0	0	0	0
7	0.03	0	0	0	0	0	0	0	0	0	0	0
8	0.03	0.02	0	0	0	0	0	0	0	0	0	0
9	0.06	0.02	0	0	0	0	0	0	0	0	0	0
10	0.06	0	0	0	0	0	0	0	0	0	0	0
11	0.06	0.01	0	0	0	0	0	0	0	0	0	0
12	0.06	0.01	0	0	0.06	0	0	0	0	0	0	0
13	0.06	0.04	0	0	0.06	0	0.03	0	0	0	0	0
14	0.06	0.01	0	0	0	0	0	0	0	0	0	0
15	0.06	0.01	0	0	0.08	0	0	0	0	0	0	0
16	0.06	0	0	0	0	0	0	0	0	0	0	0
17	0.06	0.04	0	I*	0	0	0	0	0	0	0	0
18	0.03	0.01	0	0	0	0	0	0	0	0	0	0
19	0.06	0.01	0	0	0	0	0	0	0	0	0	0
20	0.03	0	0	0	0	0	0	0	0	0	0	0
21	0.03	1.1	0	0.00	0	0	0	0	0	0	0	0
22	0.03	0.06	0	0.03	0	0	0	0	0	0	0	0
23	0.03	0.03	0	0.06	0	0	0	0	0	0	0	0
24	0.03	0.03	0	0.03	0	0	0	0	0	0	0	0
25	2.0	0.03	0.03	0.06	0	0	0	0	0	0	0	0
26	1.6	0.03	0	0.03	0	0	0	0	0	0	0	0
27	0	0.03	0	0	0	0	0	0	0	0	0	0
28	1.4	I	0	0.03	0	0	0	0	0	0	0	0
29	0	I	0	0.03	0	0	0	0	0	0	0	0
30	0	0	0	0.03		0	0	0	0	0	0	0
31	0.02		0	0.03		0		0		0	0	

*I = Ice or snow present in channel.

E125 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.70	0.18	0.02	0.07	0.01	0	0	0	0	0	0	0	1.0
Max Daily Peak (ft^3/s)	2.0	1.1	0.11	0.06	0.08	0	0.03	0	0	0	0	0	2.0
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	2	0	1	0	0	0	0	0	0	0	0	3

Mortandad Watershed

The Mortandad Canyon watershed is located in the central portion of LANL and covers approximately 10 mi^2. The watershed contains a stream that is entirely ephemeral; neither perennial springs nor natural perennial reaches occur. The Mortandad watershed trends east-to-southeast and heads on the Pajarito Plateau near the main LANL complex at TA-03 at an elevation of 7380 ft. The drainage extends from its headwaters to its confluence with the Rio Grande at an elevation of 5440 ft. Mortandad Canyon crosses Pueblo de San Ildefonso land for several miles before joining the Rio Grande. The Mortandad watershed may be influenced by two significant tributaries: Ten Site Canyon and Cañada del Buey. Snowmelt runoff and storm water runoff from seasonal snow and rain storms flow for a limited distance in the upper canyon and occasionally as far as the sediment traps. Ten Site Canyon lies south of and extends parallel to Mortandad Canyon for about 1.5 mi. Ten Site Canyon joins Mortandad Canyon in the lower portion of the drainage. Cañada del Buey heads on LANL property at TA-52 and TA-36 at an elevation of approximately 7200 ft and trends east-southeast across LANL, Pueblo de San Ildefonso land, and Los Alamos County and ends at its confluence with Mortandad Canyon at an elevation of 5620 ft, approximately 0.5 mi upstream of the Rio Grande.

Figure 5 shows the total monthly volume of discharge at the four stream gaging stations within the Mortandad Canyon and Cañada del Buey watershed.

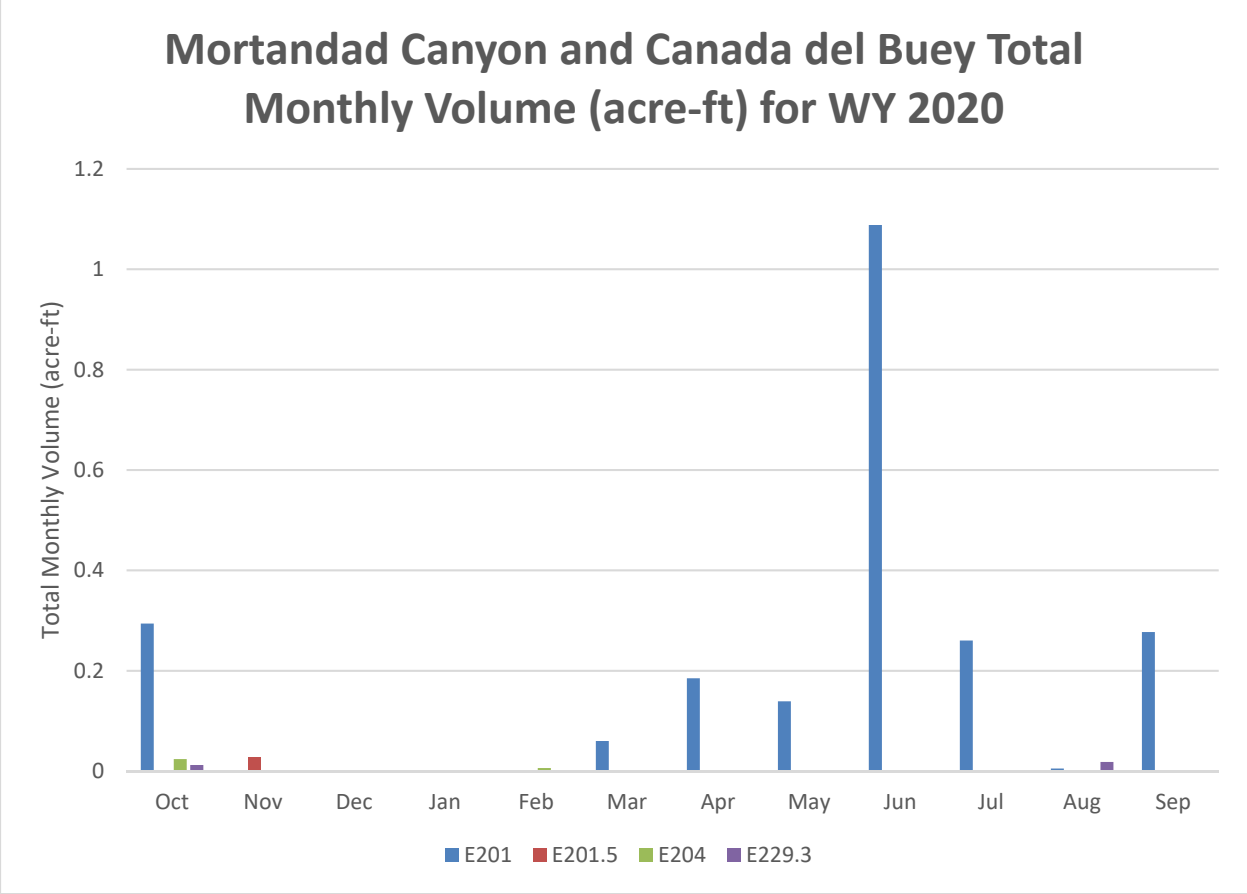


Figure 5 Total monthly volume (acre-ft) for WY 2020 in Mortandad Canyon and Cañada del Buey

E201 Mortandad Canyon above Ten Site Canyon

Location. Lat 35° 51’ 46”, Long –106° 16’ 29”, SW ¼, Sec. 22, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.25 mi^2.

Period of Record. October 1, 2006, to September 30, 2020.

Revised Record. Period of Record (2008).

Gage. Data logger with radio telemetry and a steel-fabricated nonstandard flume. Elevation of the gage is 6865 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 9 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 107 ft^3/s, September 13, 2013, gage height 3.0 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.54 ft^3/s, October 25, 2019, gage height 0.28 ft.

E201 Stream gaging upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor mounted on a 10-ft flume, which replaced the Milltronics sonic probe on February 1, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler (12-count 1-L glass and/or polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except November 26–30, 2019; December 1–7, 2019; January 17–31, 2020; and February 1–24, 2020 when the gage was affected by ice and snow in the channel.

Rating. The channel is straight above and below the modified flume. Flow is confined to the cutbanks. The channel bottom is 3 ft wide with some vegetation above and below the flume.

The streambed is sand and gravel, and the flume is subject to fill from low-flow events. The control is a fabricated steel flume 10 ft at the throat.

Rating No. 2 was developed based on slope-area computations and discharge measurements.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying Rating No. 2.

E201 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.03	I*	0	I	0	0	0.03	0.10	0.03	0	0
2	0	0.03	I	0	I	0	0	0.03	0.16	0	0	0
3	0	0.03	I	0	I	0	0	0	0.13	0	0	0
4	0	0.03	I	0	I	0	0	0	0.19	0	0	0
5	0.10	0.03	I	0.03	I	0	0	0	0.19	0.03	0	0
6	0.03	0.03	I	0	I	0	0	0.03	0.13	0	0	0
7	0.06	0.13	I	0	I	0	0	0	0.16	0	0	0
8	0.10	0	0	0	I	0	0	0	0.13	0	0	0
9	0	0	0.03	0	I	0	0	0	0.06	0	0.22	0.03
10	0.03	0	0.29	0	I	0	0	0	0.13	0	0	0.16
11	0	0	0.29	0	I	0	0	0	0.03	0	0	0.22
12	0	0	0	0	I	0	0	0	0.13	0	0	0.35
13	0	0	0	0.13	I	0	0.29	0	0.13	0	0	0
14	0	0	0	0.38	I	0	0.25	0	0.16	0	0	0
15	0	0	0	0.16	I	0	0	0	0.16	0	0	0
16	0	0	0	0.13	I	0	0	0	0.16	0.10	0	0
17	0	0	0	I	I	0	0	0	0.06	0.03	0	0
18	0.03	0	0	I	I	0	0	0.03	0.06	0.22	0	0
19	0	0	0	I	I	0	0	0	0.03	0.19	0	0
20	0	0	0	I	I	0.29	0	0	0.06	0	0	0
21	0	0	0	I	I	0	0	0	0.06	0.22	0	0
22	0	0	0	I	I	0	0	0	0.10	0	0	0.22
23	0	0	0	I	I	0	0	0	0.03	0	0	0
24	0.41	0	0.10	I	I	0	0	0	0.03	0.06	0	0
25	0.54	0	0.03	I	0	0	0	0	0	0.29	0	0
26	0	I	0	I	0	0	0	0.03	0	0.32	0	0
27	0.25	I	0.22	I	0	0	0	0.03	0.03	0.25	0	0
28	0	I	0.06	I	0	0	0	0.06	0.03	0.19	0	0
29	0.19	I	0	I	0	0	0	0.06	0	0	0	0
30	0.35	I	0	I		0	0	0.10	0	0	0	0
31	0.03		0	I		0		0.16		0	0	

*I = Ice or snow present in channel.

E201 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.29	0.11	0.17	I[a,b]	I	0.06	0.19	0.14	1.1	0.26	0.01	0.28	2.6
Max Daily Peak (ft^3/s)	0.54	0.13	0.29	I	I	0.29	0.29	0.16	0.19	0.32	0.22	0.35	0.54
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	5	7	15	24	0	0	0	0	0	0	0	36

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E201.5 Ten Site Canyon above Mortandad Canyon

Location. Lat 35° 51’ 38”, Long –106° 16’ 30”, SE ¼, Sec. 23, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 0.32 mi^2.

Period of Record. October 2000 to September 30, 2020.

Revised record. Drainage area (2006).

Gage. Data logger with radio telemetry and 90° sharp-crested weir. Elevation of gage is 6858 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 4 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 303 ft^3/s, August 25, 2006, gage height 4.6 ft (from slope-area measurement of peak flow).

Maximum Discharge for WY 2020. Maximum discharge, 0.15 ft^3/s, November 29, 2019, gage height 2.41 ft.

E201.5 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor, until it was replaced with an OTT RLS radar sensor on December 13, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is also equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provisions have been made for measurements above the wading stage.

Datum Correction. On May 24, 2007, the gage was set to correct the datum. The gage was destroyed by flood on August 25, 2006. The bubbler outlet was reset to a gage datum of 1.33 ft. A large runoff event on July 26, 2019, deposited large amounts of woody debris and sediment behind the 90-degree sharp-crested weir. The flood also knocked the radar sensor and buried the ISCO intake lines. The station was quickly made operational after the flood, but the weir was deemed necessary to remove. On August 20, 2019, the 90-degree sharp-crested weir was removed. The gage datum remained the same.

Gage-Height Record. The data logger reference to the outside staff gage gave a complete and satisfactory record, except January 17–22, 2020 when the gage was affected by snow and ice.

Rating. The channel is about 8 ft wide and straight for about 60 ft upstream and straight for about 30 ft downstream. The streambed through this reach is primarily sand with gravel.

Rating No. 2 is based on a theoretical computation for the 90-degree sharp-crested weir and one critical-depth computation. Because of the removal of the 90-degree sharp-crested weir on August 20, 2019, a new rating curve will be developed. Work on rating curve development was postponed during 2020 as field activities were curtailed for part of the season.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying Rating No. 2.

E201.5 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	<0.01	0	0	0	0	0	0	0	0	0	0
2	0	<0.01	0	0	0	0	0	0	0	0	0	0
3	0	<0.01	0	0	0	0	0	0	0	0	0	0
4	0	<0.01	0	0	0	0	0	0	0	0	0	0
5	0	<0.01	0	0	0	0	0	0	0	0	0	0
6	0	<0.01	0	0	0	0	0	0	0	0	0	0
7	0	<0.01	0	0	0	0	0	0	0	0	0	0
8	0	<0.01	0	0	0	0	0	0	0	0	0	0
9	0	<0.01	0	0	0	0	0	0	0	0	0	0
10	0	<0.01	0	0	0	0	0	0	0	0	0	0
11	0	<0.01	0	0	0	0	0	0	0	0	0	0
12	0	<0.01	0	0	0	0	0	0	0	0	0	0
13	0	<0.01	0	0	<0.01	0	0	0	0	0	0	0
14	0	<0.01	0	0	0	0	0	0	0	0	0	0
15	0	<0.01	0	0	0	0	0	0	0	0	0	0
16	0	<0.01	0	0	0	0	0	0	0	0	0	0
17	0	<0.01	0	I*	0	0	0	0	0	0	0	0
18	0	<0.01	0	I	0	0	0	0	0	0	0	0
19	0	<0.01	0	I	0	0	0	0	0	0	0	0
20	0	<0.01	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	<0.01	0	I	0	0	0	0	0	0	0	0
23	0	<0.01	0	0	0	0	0	0	0	0	0	0
24	0.005	<0.01	0	0	0	0	0	0	0	0	0	0
25	<0.01	<0.01	0	0	0	0	0	0	0	0	0	0
26	<0.01	<0.01	0	0	0	0	0	0	0	0	0	0
27	0	<0.01	0	0	0	0	0	0	0	0	0	0
28	0.006	0	0	0	0	0	0	0	0	0	0	0
29	<0.01	0.152	0	0	0	0	0	0	0	0	0	0
30	<0.01	0	0	0		0	0	0	0	0	0	0
31	<0.01		0	0		0		0		0	0	

*I = Ice or snow present in channel.

E201.5 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0	0.3	0	0	0	0	0	0	0	0	0	0	0.03
Max Daily Peak (ft^3/s)	0.01	0.15	0	0	0	0	0	0	0	0	0	0	0.15
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	6	0	0	0	0	0	0	0	0	6

E204 Mortandad Canyon at LANL Boundary

Location. Lat 35° 51’ 21”, Long –106° 14’ 43”, NW ¼, Sec. 30, T. 19 N., R. 7 E., Santa Fe County.

Drainage Area. 1.61 mi^2.

Period of Record. October 1, 1993, to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6654 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 1 acre-ft.

Maximum Discharge for Period of Record. Maximum discharge, 102 ft^3/s, September 13, 2013, gage height 1.85 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.17 ft^3/s, October 24, 2019, gage height 0.75 ft.

E204 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and shaft encoder float system, which was replaced on September 13, 2019, with an OTT RLS radar sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter on top of a 24-in. CMP well. The station is equipped with an ISCO pump sampler (12-count 1-L glass and polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

Datum Correction. Levels run on May 24, 2007, showed the gage to be reading within allowable limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record except November 27–30, 2019; December 1–3, 2019; and January 16–23 when the gage was affected by ice and snow.

Rating. The channel is straight above and below the gaging station for 100 ft. The channel is not well defined and resembles a low grass-covered swale. Flow is infrequent. The control is a broad-crested weir with a v-notch 5 ft downstream from the gaging station.

Rating No. 1 was developed using slope-area computations. The PZF is well defined for the concrete broad-crested weir.

No discharge measurements were made during the year.

Discharge. No flow occurs most of the time. Discharge was computed by directly applying Rating No. 1.

E204 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	0	0	0	0	0	0	0	0	0
2	0	0	I	0	0	0	0	0	0	0	0	0
3	0	0	I	0	0	0	0	0	0	0	0	0
4	0.06	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0.04	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0.02	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0.04	0	0	0	0	0	0	0
12	0	0	0.02	0	0.10	0	0	0	0	0	0	0
13	0	0	0.02	0	0.04	0	0.06	0	0	0	0	0
14	0	0	0	0	0.02	0	0	0	0	0	0	0
15	0	0	0.04	0	0	0	0	0	0	0	0	0
16	0	0	0.06	I	0	0	0	0	0	0	0	0
17	0	0	0	I	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0.04	0	I	0	0	0	0	0	0	0	0
23	0	0.06	0	I	0	0	0	0	0	0	0	0
24	0.17	0.06	0	0	0	0	0	0	0	0	0	0
25	0.08	0.04	0.02	0	0	0	0	0	0	0	0	0
26	0	0.06	0.02	0	0.02	0	0	0	0	0	0	0
27	0	I	0	0	0	0	0	0	0	0	0	0
28	0.12	I	0.02	0	0	0	0	0	0	0	0	0
29	0	I	0.02	0.02	0	0	0	0	0	0	0	0
30	0	I	0.04	0		0	0	0	0	0	0	0
31	0		0.02	0		0		0		0	0	

*I = Ice or snow present in channel.

E204 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.02	0.02	0.03	0	0.01	0	0.01	0	0	0	0	0	0.08
Max Daily Peak (ft^3/s)	0.17	0.06	0.06	0.02	0.10	0	0.06	0	0	0	0	0	0.17
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	4	3	8	0	0	0	0	0	0	0	0	15

E229.3 Cañada del Buey at SR 4

Location. Lat 35° 49’ 41”, Long -106° 13’ 23”, Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 1.81 mi^2.

Period of Record. April 24, 2013, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6510 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 8 yr, 1 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 28 ft^3/s, August 8, 2013, gage height 1.84 ft.

Maximum Discharge for WY 2020. Maximum discharge, 1.2 ft^3/s, August 29, 2020, gage height 0.41 ft.

E229.3 Stream gaging downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and an MDS radio transceiver. An OTT RLS radar sensor sits atop a 2-ft-wide by 1.5-ft-deep Parshall flume, which replaced the Sutron Accubar air-purge bubble sensor and a Milltronics sonic probe on January 18, 2018. No provision has been made for direct discharge measurements above the wading stage. The station is equipped with an ISCO pump sampler (12-count 1-L glass and polyethylene bottles) to collect water-quality samples. The ISCO is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. A line-of-sight radio transceiver provides 5-min stage data from the radar sensor.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except November 28–29, 2019; and January 17–22, 2020 when the gage was affected by ice and snow.

Rating. Rating No. 1 is based on the formula for a 2-ft-wide by 1.5-ft-deep Parshall flume, with additional flow added for flow over the flume, based on a broad-crested weir equation. A gabion wall, for the flume overflow, forms a raised, rectangular cross-section 1.5 ft deep × 15 ft wide.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying Rating No. 1.

E229.3 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0.82	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0.03	0	0	0	0	0	0	0
12	0	0	0	0	0.03	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	I*	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	I	0	0	0	0	0	0	0	0	0	0
29	0	I	0	0	0	0	0	0	0	0	1.2	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

*I = Ice or snow present in channel.

E229.3 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0	0	0	0	0	0	0	0	0	0.02	0	0.03
Max Daily Peak (ft^3/s)	0.82	0	0	0	0.03	0	0	0	0	0	1.2	0	1.2
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	2	0	6	0	0	0	0	0	0	0	0	8

Pajarito Watershed

The Pajarito Canyon watershed is located in the central portion of LANL and is approximately 13.6 mi^2 in area. The head of the watershed is located in the Sierra de los Valles at an elevation of 10,441 ft at Pajarito Mountain. The watershed is a long, east-southeast trending canyon that extends across Valles Caldera National Preserve land and Santa Fe National Forest before it enters LANL's western boundary. Two major tributary canyons, Two Mile and Three Mile Canyons, intersect Pajarito Canyon on LANL property. The watershed reaches the Rio Grande at an elevation of approximately 5410 ft. Two Mile Canyon heads in the Sierra de los Valles and has a length of approximately 5 mi and a drainage area of 3.1 mi^2, 70% of which is on LANL land. Sections of the upper portion of Pajarito watershed burned during the Las Conchas fire in June and July 2011. Both Two Mile and Three Mile Canyons contain ephemeral and intermittent streams. Seasonal springs in Two Mile Canyon and perennial springs in Three Mile Canyon support short reaches of ephemeral and perennial flow, respectively. East of the confluence with Three Mile Canyon, Pajarito Canyon is ephemeral across LANL property to a point approximately 0.4 mi upstream from the confluence with the Rio Grande. In most years, snowmelt runoff extends onto LANL property downstream to near the confluence with Three Mile Canyon. Local runoff and stream flow from seasonal rainstorms occasionally extend downstream as far as the Rio Grande.

The Pajarito watershed contains, or may influence, 12 wetland areas totaling approximately 15.80 acres. Figure 6 shows the total monthly volume of discharge for the four stream discharge gaging stations within the Pajarito watershed.

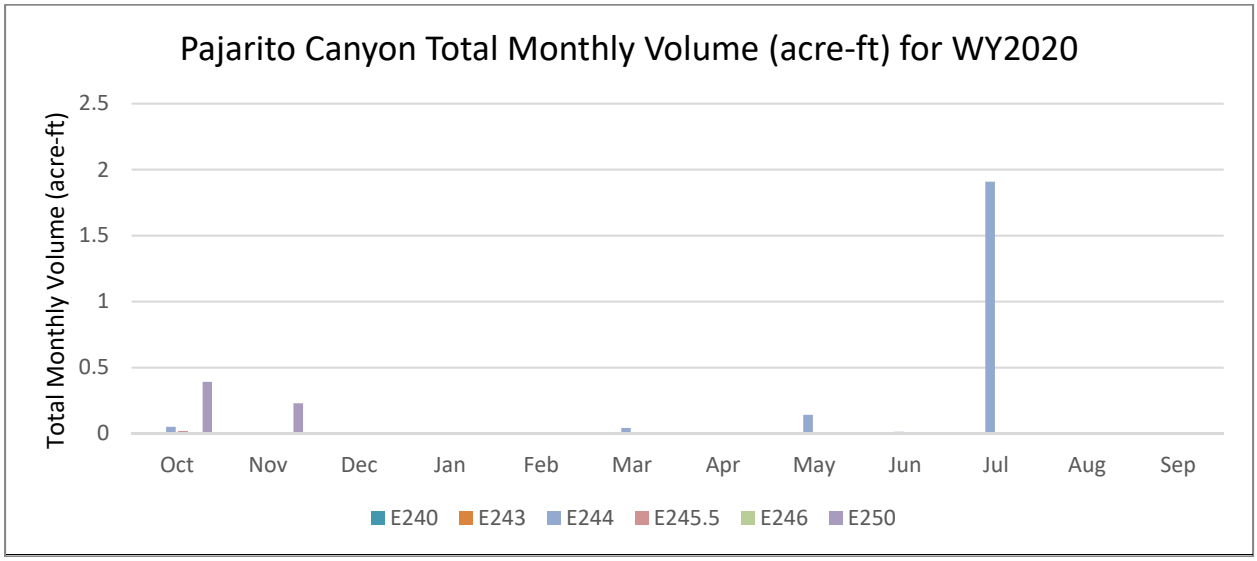


Figure 6 Total monthly volume (acre-ft) for WY 2020 for Pajarito Canyon

E240 Pajarito Canyon below SR 501

Location. Lat 35° 52’ 02”, Long –106° 21’ 05”, NW ¼, Sec. 19, T. 19 N., R. 6 E., Los Alamos County.

Drainage Area. 1.90 mi^2.

Period of Record. October 1993 to June 28, 2000 (destroyed by flood); April 2001 to September 30, 2020.

Revised Record. Water Data Report 1997: Gage height “Extremes for Period of Record.” Drainage area (2006). Levels date published as 2004, correction to December 2001 (2008).

Gage. Data logger with radio telemetry. Elevation of gage is 7719 ft using LANL LIDAR DEM with NAD 83. Formerly published as “Pajarito Canyon above Highway 501 near Los Alamos, NM” at different datum.

Average Volume. 9 yr, 8 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1020 ft^3/s, June 28, 2000, from peak-flow computation; gage height not determined.

Maximum Discharge for WY 2020. Maximum discharge, 0.16 ft^3/s, December 27, 2019, gage height 1.07 ft.

E240 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system, which was replaced with an OTT RLS radar sensor on February 28, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter on top of a 24-in. CMP well. The station is equipped with one ISCO pump sampler (12-count 1-L glass and polyethylene bottles) to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage.

The station is also equipped with a rain gage. The tipping bucket rain gage, Rain Collection II, was replaced with the Campbell Scientific tipping bucket rain gage TE525 on March 5, 2019. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. The levels run December 11, 2001, show the gage to be within limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except November 27–30, 2019; December 1–6, 2020: January 17–31, 2020; and February 1–19, 2020, when the gage was affected by ice and snow.

Rating. The gaging station is about 300 ft below the outlet of two round culverts through the NM 501 road bed. The channel bed is sand and gravel and subject to movement. The grass and brush are fairly thick in overbank areas. The banks are not high (about 1 to 2 ft in most places). Two gabions were installed in the fall of 2001, which act as low-water controls. One is 2 ft below the gaging station across the entire width of the channel with a 6-in. v-notch for low water. Another gabion is 50 ft above the gaging station.

Rating No. 4 was developed based on the six measurements and slope area from previous years.

No discharge measurements were made during the year.

Discharge. Discharge was computed by applying the gage height to Rating No. 4 using variable shift diagrams.

E240 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	0	I	0.01	0	0	0	0	0	0
2	0	0	I	0	I	0.01	0	0	0	0	0	0
3	0	0	I	0	I	0.01	0	0	0	0	0	0
4	0	0	I	0	I	0.01	0	0	0	0	0	0
5	0	0	I	0.06	I	0.01	0	0	0	0	0	0
6	0	0	I	0	I	<0.01	0	0	0	0	0	0
7	0	0	0.01	0	I	<0.01	0	0	0	0	0	0
8	0	0	0.03	0	I	0	0	0	0	0	0	0
9	0	0	0.02	0	I	0	0	0	0	0	0	0.03
10	0	0	<0.01	0	I	0	0	0	0	0	0	0
11	0	0	0	0	I	0	0	0	0	0	0	0
12	0	0	0	0	I	0	0	0	0	0	0	0
13	0	0	0	0	I	0	0.01	0	0	0	0	0
14	0	0	0	0.01	I	0	0.01	0	0	0	0	0
15	0	0	0	0.02	I	0	0	0	0	0	0	0
16	0	0	0	0.02	I	0	0	0	0	0	0	0
17	0	0	0	I	I	0	0	0	0	0	0	0
18	0	0	<0.01	I	I	0.03	0	0	0	0	0	0
19	0	0	<0.01	I	0.12	0.05	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0.03	0.01	I	0.01	0	0	0	0	0	0	0
22	0	0	<0.01	I	0.02	0	0	0	0	0	0	0
23	0	0	0	I	0.01	0	0	0	<0.01	0	0	0
24	0	0.06	0	I	0.01	0	0	0	0	0	0	0
25	0	0.03	0	I	0.01	0	0	0	0	0	0	0
26	0	0.01	<0.01	I	0.02	0	0	0	0	0	0	0
27	0	I	0.16	I	0.01	0	0	0	0	0	0	0
28	0.05	I	0	I	0.01	0	0	0	0	0	0.03	0
29	0.03	I	0	I	0.01	0	0	0.05	0	0	0	0
30	0	I	0	I		0	0	0	0	0	0	0
31	0		0	I		0		0		0	0	

*I = Ice or snow present in channel.

E240 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0.01	0.04	I[a,b]	I	0	0	0	0	0	0	0.01	0.11
Max Daily Peak (ft^3/s)	0.05	0.06	0.16	I	I	0.05	0.01	0.05	0	0	0.03	0.03	0.16
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	4	6	15	18	0	0	0	0	0	0	0	43

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E243 Pajarito Canyon above Two Mile Canyon

Location. Lat 35° 51' 14", Long –106° 17' 48", Sec. 27, T. 19 N., R. 6 E., Ramon Vigil Grant, Los Alamos County.

Drainage Area. 4.24 mi^2.

Period of Record. February 2002 to August 11, 2011, and August 5, 2014, to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry. Elevation of gage 6941 ft above NGVD from global positioning system (GPS) survey.

Average Volume. 6 yr, 0.40 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 746 ft^3/s, August 21, 2011, estimated from high-water mark survey.

Maximum Discharge for WY 2020. No measureable discharge for the water year.

E243 Stream gaging station downstream view

Equipment. Station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubble sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler for water quality sample collection. The ISCO is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. No provision has been made for direct measurement above the wading stage. During the August 21, 2011, severe storm event, a bubbler line was destroyed along with a shelter, a data logger, and the associated ISCO intake suction lines. The gage was deemed unusable and the logged data was irretrievable. The gaging station was restored to working condition in August 2014.

Datum Correction. None. The levels run on April 7, 2006, found the gage to be within limits. No corrections were needed.

Gage-Height Record. The data logger referenced to the outside staff gave a complete and satisfactory record.

Rating. The channel is straight for 150 ft above and below the gaging station. The channel is trapezoidal with the bed fairly well armored with large gravel and some cobbles. The banks are fairly well vegetated with grasses and should remain stable at all flows.

No discharge measurement was made during the year.

Rating No. 4 was continued in use.

Discharge. Discharge was computed by applying gage height to Rating No. 4 with shifts at low flow applied by “V” diagrams. The PZF shows some estimated zero flow in winter from icing over the orifice; the stream was frozen dry during this time.

E243 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

E243 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

E244 Two Mile Canyon above Pajarito Canyon

Location. Lat 35° 51’ 15", Long –106° 17’ 46", Sec. 27, T. 19 N., R. 6 E., Ramon Vigil Grant, Los Alamos County.

Drainage Area. 3.15 mi^2.

Period of Record. October 1, 2002, to July 13, 2011, and June 18, 2014, to September 30, 2020.

Revised Record. Drainage area (2006). Period of record (2008). Period of record (2014).

Gage. Data logger and radio telemetry. Elevation of gage is 6940 ft above NGVD from GPS survey.

Average Volume. 6 yr, 33 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 628 ft^3/s, August 25, 2006, gage height 6.01 ft (from flood marks).

Maximum Discharge for WY 2020. Maximum discharge, 0.38 ft^3/s, October 24, 2019, gage height 4.0 ft.

E244 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor, which replaced the Milltronics sonic probe on October 20, 2017. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler for water quality sample collection. The ISCO is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. Wading measurements can be in the vicinity of the gaging station. No provision has been made for measurement above the wading stages.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record for the year, except November 28–30, 2019; December 1–3, 2019; January 14–28, 2020; and February 11–15, 2020, when the gage was affected by ice and snow.

Rating. The channel at the gaging station is straight for about 150 ft above the gaging station and 50 ft below the gaging station. The channel expands quite a bit below the gaging station. The bed material is coarse sand and gravel. The banks are grassy with some small trees and outcrops affecting roughness at higher flows.

No discharge measurements were made during the year.

Rating No. 2 was developed from previous measurements and one slope area measurement.

Discharge. Discharge was computed by directly applying Rating No. 2.

E244 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	0	0	0	0	0	0.06	0	0	0
2	0	0	I	0	0	0	0	0	0	0	0	0
3	0	0	I	0	0	0	0.02	0	0	0	0	0
4	0.07	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0.06	0	0
9	0	0	0	0	0	0	0	0	0	0.06	0	0
10	0.02	0	0	0	0	0	0	0	0	0.06	0	0
11	0	0	0	0	I	0	0	0.04	0	0.06	0	0
12	0	0	0	0	I	0	0	0.04	0	0.06	0	0
13	0	0	0	0	I	0	0.02	0	0	0.06	0	0
14	0	0	0	I	I	0	0	0.07	0	0.06	0	0
15	0	0	0	I	I	0	0	0.06	0	0.06	0	0
16	0	0	0	I	0	0	0	0.06	0	0.06	0	0
17	0	0	0	I	0	0	0	0	0	0.06	0	0
18	0	0	0	I	0	0	0	0	0	0.07	0	0
19	0	0	0	I	0	0.06	0	0	0	0.06	0	0
20	0	0	0	I	0	0	0	0.07	0	0.06	0	0
21	0	0.27	0	I	0	0	0	0	0	0.04	0	0
22	0	0.14	0	I	0	0	0	0	0	0.06	0	0
23	0	0	0	I	0	0	0	0.07	0.02	0.09	0	0
24	0.38	0	0	I	0	0.02	0	0	0	0.11	0	0
25	0.14	0	I	I	0	0.02	0	0.02	0	0.12	0	0
26	0	0	0	I	0	0.02	0	0.09	0	0.11	0	0
27	0	0	0	I	0	0.02	0	0.14	0	0.12	0	0
28	0.15	I	0	I	0	0.02	0	0	0	0.12	0	0
29	0	I	0	0	0	0.02	0	0.09	0	0.09	0	0
30	0	I	I	0		0.02	0	0	0	0	0	0
31	0		I	0		0.02		0.02		0	0	

*I = Ice or snow present in channel.

E244 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.05	0.04	0	0	0	0.04	0	0.14	0.01	1.9	0	0	2.2
Max Daily Peak (ft^3/s)	0.38	0.27	0	0	0	0.06	0.02	0.14	0.06	0.12	0	0	0.38
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	3	6	15	5	0	0	0	0	1	2	0	32

E245.5 Pajarito Canyon above Three Mile Canyon

Location. Lat 35° 50’ 45.3”, Long –106° 16’ 29”, Sec. 16, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 7.81 mi^2.

Period of Record. October 1, 2002, to September 30, 2020.

Revised Record. Drainage area (2008).

Gage. Data logger and radio telemetry. Elevation of gage is 6796 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 121 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 630 ft^3/s, September 13, 2013, gage height 4.82 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.20 ft^3/s, October 24, 2019, gage height 1.54 ft.

E245.5 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor, which replaced the Milltronics sonic probe on January 25, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stage.

The station is also equipped with a tipping bucket rain gage. The tipping bucket rain gage, Rain Collection II, was replaced with the Campbell Scientific tipping bucket rain gage, TE525, on August 21, 2019. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. Levels run May 12, 2008, show the gage to be within limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 28–30, 2019; December 1–4, 2019; January 17–31, 2020; and February 1–18, 2020, when the gage was affected by ice and snow.

Rating. The channel is straight for 80 ft above and below the gaging station. The banks have some vegetation, and the streambed is sand and gravel.

Rating No. 4 was developed from previous measurements and one critical-depth computation.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying Rating No. 4.

E245.5 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	0.13	I	0	0	0	0	0	0	0
2	0	0	I	0	I	0	0	0	0	0	0	0
3	0	0	I	0	I	0	0	0	0	0	0	0
4	0	0	I	0	I	0	0	0	0	0	0	0
5	0	0	0	0	I	0	0	0	0	0	0	0
6	0	0	0	0	I	0	0	0	0	0	0	0
7	0	0	0	0	I	0	0	0	0	0	0	0
8	0	0	0	0	I	0	0	0	0	0	0	0
9	0	0	0	0	I	0	0	0	0	0	0	0
10	0	0	0	0	I	0	0	0	0	0	0	0
11	0	0	0	0	I	0	0	0	0	0	0	0
12	0	0	0	0	I	0	0	0	0	0	0	0
13	0	0	0	0	I	0	0	0	0	0	0	0
14	0	0	0	0	I	0	0	0	0	0	0	0
15	0	0	0	0	I	0	0	0	0	0	0	0
16	0	0	0	0	I	0	0	0	0	0	0	0
17	0	0	0	I	I	0	0	0	0	0	0	0
18	0	0	0	I	I	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	I	0	0	0	0	0	0	0	0
24	0.20	0	0	I	0	0	0	0	0	0	0	0
25	0.17	0	0	I	0	0	0	0	0	0	0	0
26	0	0	0	I	0	0	0	0	0	0	0	0
27	0	0	0	I	0	0	0	0	0	0	0	0
28	0	I	0	I	0	0	0	0	0	0	0	0
29	0	I	0	I	0	0	0	0	0	0	0	0
30	0	I	0	I		0	0	0	0	0	0	0
31	0		0	I		0		0		0	0	

*I = Ice or snow present in channel.

E245.5 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0	0	0	0	0	0	0	0	0	0	0	0.01
Max Daily Peak (ft^3/s)	0.20	0	0	0.13	0	0	0	0	0	0	0	0	0.20
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	3	4	15	18	0	0	0	0	0	0	0	40

E246 Three Mile Canyon above Pajarito Canyon

Location. Lat 35° 50’ 20”, Long –106° 16’ 17”, Sec. 35, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 1.62 mi^2.

Period of Record. October 1998 to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger and 9-in. Parshall flume with radio telemetry. Elevation of gage is 6759 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 4 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 900 ft^3/s, September 13, 2013, gage height 4.6 ft.

Maximum Discharge for WY 2018. Maximum discharge, 0.06 ft^3/s, October 25, 2019, gage height 0.13 ft.

E246 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor mounted on a 9-in. Parshall flume, which replaced the Milltronics sonic probe on January 25, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter on the right bank. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. The staff gage in the 90-in. Parshall flume is the reference gage. No provision has been made for direct discharge measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record, except November 29–30, 2019; December 1–3, 2019; January 16–31, 2020; and February 1–11, 2020, when the gage was affected by ice and snow.

Rating. The channel is straight above and below the gaging station. Streamflow is confined to the main channel by cutbanks on both sides. The bottom is 10 ft wide; the channel is prone to some shifting with vegetation on each bank. The low-water control is the 9-in. Parshall flume.

Rating No. 1 was developed based on the computation of the 9-in. Parshall flume and was extended on the basis of two critical-depth computations. The PZF is 0.00 gage height.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 1.

E246 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I*	0	I	0	0	0	0	0	0	0
2	0	0	I	0	I	0	0	0	0	0	0	0
3	0	0	I	0	I	0	0	0	0	0	0	0
4	0	0	0	0	I	0	0	0	0	0	0	0
5	0	0	0	0	I	0	0	0	0	0.01	0	0
6	0	0	0	0	I	0	0	0	0.04	0	0	0
7	0	0	0	0	I	0	0	0	0	0	0	0
8	0	0	0	0	I	0	0	0	0	0	0	0
9	0	0	0	0	I	0	0	0	0	0	0	0
10	0	0	0	0	I	0	0	0	0	0	0	0
11	0	0	0	0	I	0	0	0.01	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0.02	0	0	0	0	0	0	0
15	0	0	0	0	0.06	0	0	0	0	0	0	0
16	0	0	0	I	0.01	0	0	0	0	0.01	0	0
17	0	0	0	I	0.03	0	0	0	0	0.01	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0.03	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0.01	0	I	0	0	0	0	0	0	0	0
23	0	0	0	I	0	0	0	0	0	0	0	0
24	0.04	0	0	I	0	0	0	0	0	0	0	0
25	0.06	0	0.06	I	0	0	0	0	0	0	0	0
26	0	0	0	I	0	0	0	0	0	0	0	0
27	0	0	0	I	0	0	0	0	0	0	0	0
28	0.02	0	0	I	0	0	0	0	0	0	0	0
29	0	I*	0	I	0	0	0	0	0	0	0	0
30	0	I	0	I		0	0	0	0	0	0	0
31	0		0	I		0		0		0	0	

*I = Ice or snow present in channel.

E246 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.01	0	0	0	0	0	0	0	0.01	0	0	0	0.02
Max Daily Peak (ft^3/s)	0.06	0.01	0.06	0	0.06	0	0	0.01	0.04	0.03	0	0	0.06
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	2	3	16	11	0	0	0	0	0	0	0	32

E250 Pajarito Canyon above SR 4

Location. Lat 35° 49’ 26”, Long –106° 13’ 40”, Sec. 5, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 10.6 mi^2.

Period of Record. November 1993 to August 25, 2006 (destroyed by flood); September 2006 to September 13, 2013 (damaged by high-flow event); and October 1, 2014, to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6535 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 6 yr, 1 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 960 ft^3/s, September 13, 2013, gage height 5.23 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.53 ft^3/s, October 4, 2019, gage height 0.05 ft.

E250 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system. The system is powered by a solar-panel battery system housed in a NEMA shelter on an 18-in. CMP well. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stage.

Datum Correction. None. The most recent levels run on November 17, 2004, found the gage to be within acceptable limits.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. The channel is straight for 50 ft above and 100 ft below the gaging station. The streambed material is gravel. The control is concrete with a 90-degree weir plate.

Rating No. 1 was developed from a 90-degree weir plate formula and broad-crested weir computation above the notch. Rating No. 1 has been used and is considered good.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 1.

E250 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.01	0	0	0	0	0	0	0	0	0	0
2	0	0.01	0	0	0	0	0	0	0	0	0	0
3	0	0.01	0	0	0	0	0	0	0	0	0	0
4	0.53	0.01	0	0	0	0	0	0	0	0	0	0
5	0.01	0.01	0	0	0	0	0	0	0	0	0	0
6	0	0.01	0	0	0	0	0	0	0	0	0	0
7	0	0.01	0	0	0	0	0	0	0	0	0	0
8	0	0.01	0	0	0	0	0	0	0	0	0	0
9	0	0.01	0	0	0	0	0	0	0	0	0	0
10	0	0.01	0	0	0	0	0	0	0	0	0	0
11	0	0.01	0	0	0	0	0	0	0	0	0	0
12	0	0.01	0	0	0	0	0	0	0	0	0	0
13	0	0.01	0	0	0	0	0	0	0	0	0	0
14	0	0.01	0	0	0	0	0	0	0	0	0	0
15	0	0.11	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0.01	0	0	0	0	0	0	0	0	0	0	0
22	0.01	0	0	0	0	0	0	0	0	0	0	0
23	0.01	0	0	0	0	0	0	0	0	0	0	0
24	0.01	0	0	0	0	0	0	0	0	0	0	0
25	0.01	0	0	0	0	0	0	0	0	0	0	0
26	0.01	0	0	0	0	0	0	0	0	0	0	0
27	0.01	0	0	0	0	0	0	0	0	0	0	0
28	0.01	0	0	0	0	0	0	0	0	0	0	0
29	0.01	0	0	0	0	0	0	0	0	0	0	0
30	0.01	0	0	0		0	0	0	0	0	0	0
31	0.01		0	0		0		0		0	0	

E250 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.39	0.23	0	0	0	0	0	0	0	0	0	0	0.62
Max Daily Peak (ft^3/s)	0.53	0.11	0	0	0	0	0	0	0	0	0	0	0.53
Min Daily (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

Water/Cañon de Valle Watershed

The Water Canyon/Cañon de Valle watershed is an east-to-southeast trending drainage that originates on the eastern slopes of the Sierra de los Valles in the Valles Caldera National Preserve at an elevation of 10,380 ft. The watershed remains on the Valles Caldera National Preserve for 0.4 mi, and then passes through 2.8 mi of the Santa Fe National Forest before it crosses into LANL property at the western boundary of TA-16. Primary canyons within this watershed are Cañon de Valle, the primary tributary to Water Canyon, and Potrillo and Fence Canyons.

The Water/Cañon de Valle watershed consists mainly of occasional perennial reaches arising from springs that occur in the upper reaches of the watershed; however, streams in Potrillo and Fence Canyons are entirely ephemeral in nature. Springs on the flanks of the Jemez Mountains, west of LANL's western boundary, supply flow to the upper reaches of the Water/Cañon de Valle watershed. Perennial water exists from NM 501 to the eastern edge of TA-28 in upper Water Canyon and from Peter Seep in Cañon de Valle. Streams in middle and lower Water Canyon are ephemeral, except for a perennial reach in the lower canyon supported by Spring 5AA. The Water/Cañon de Valle watershed contains, or may influence, three wetland areas totaling approximately 0.23 acres.

Water Canyon has a channel length of 13.8 mi and a drainage area of 8.8 mi^2. Several perennial springs are located in the upper reaches of Water Canyon and Cañon de Valle. Stream flow is ephemeral over most of the canyon passing through LANL property. Several perennial springs are located in upper Water Canyon in the Santa Fe National Forest, including Armistead and American Springs. These springs result in perennial reaches. A small perennial spring in lower Water Canyon, below the confluence with Potrillo Canyon, supports a very short perennial reach. Snowmelt seldom extends downstream as far as the LANL boundary.

Cañon de Valle originates west of LANL property, on the eastern slopes of the Sierra de los Valles in the Valles Caldera National Preserve at an elevation of 10,389 ft. The canyon extends east-southeast for 0.4 mi, crosses into the Santa Fe National Forest, and continues east-southeast for 2.8 mi before entering LANL property at the western boundary. Cañon de Valle has a channel length of 7.5 mi and a drainage area of 4.2 mi^2. Flow in Cañon de Valle is interrupted upstream of LANL's western boundary and is largely ephemeral on LANL property with short perennial reaches in the upper portion of the canyon. Several perennial springs located in the Santa Fe National Forest in upper Cañon de Valle result in perennial reaches.

Figure 7 shows the total monthly volume of discharge for the five stream gaging stations within the Water Canyon and Cañon de Valle watershed.

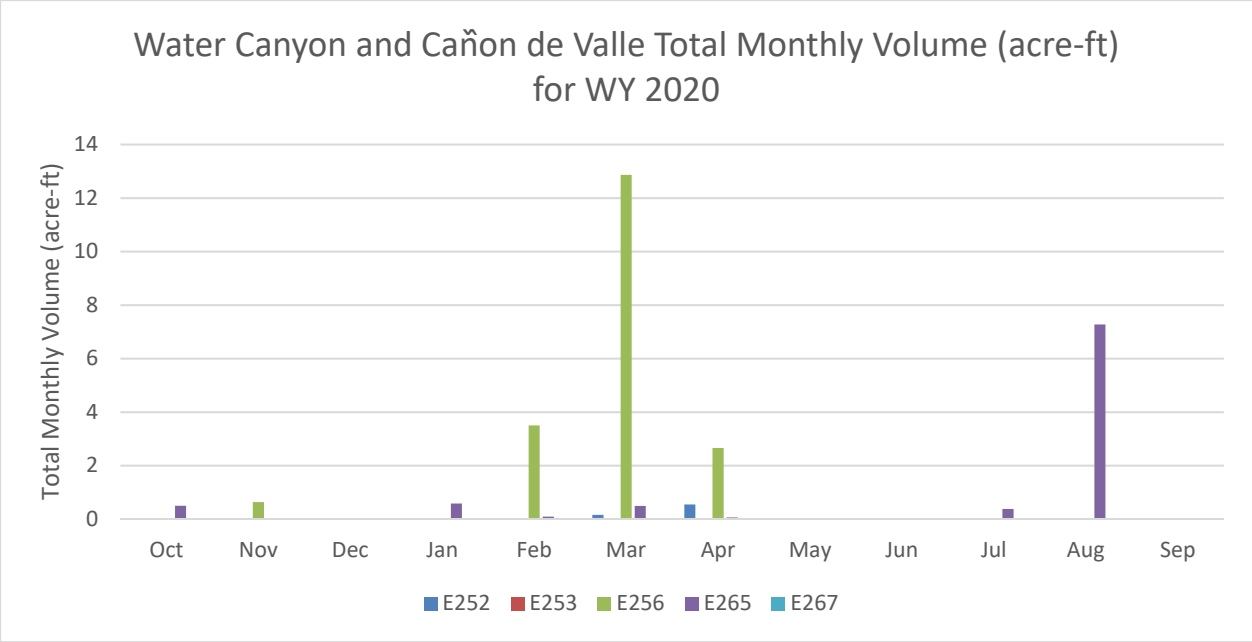


Figure 7 Total monthly volume (acre-ft) for WY 2020 in Water Canyon, Cañon de Valle, and Fence Canyon

E252 Water Canyon above SR 501

Location. Lat 35° 50’ 18”, Long –106° 21’ 42”, Sec. 36, T. 19 N., R. 5 E., Los Alamos County in Santa Fe National Forest.

Drainage Area. 3.25 mi^2.

Period of Record. October 1994 to June 2000 (destroyed by flood); April 2001 to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry. Elevation of gage is 7556 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 21 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1577 ft^3/s, August 21, 2011, estimated with high-water-mark survey.

Maximum Discharge for Current WY 2020. Maximum discharge, 0.02 ft^3/s, April 14, 2020, gage height 4.42 ft.

E252 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor, which replaced a shaft encoder float system on March 1, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter on a 24-in. CMP well. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft steel storage box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. There is no low-water control. No provision has been made for direct discharge measurements above the wading stage.

Datum Correction. None. Levels were run when the gage was established on April 16, 2001.

Gage-Height Record. The data logger referenced to the inside staff gage and reference point gave a complete and satisfactory record, except November 21–22, 27–29, 2019; December 23–29, 2019; January 16–17, 2020; and February 10–11, when the gage was affected by ice and snow; and May 27–31, 2020; June 1–30, 2020; July 1–24, 2020, when the radar sensor malfunctioned.

Rating. The channel at the gaging station is 30 ft wide and straight for about 40 ft upstream, then bends to the left; downstream the gaging station is straight for 100 ft. The streambed through this reach is primarily sand, gravel, and cobbles. The low-flow control is a rock riffle 5 ft below the gaging station. The channel has been scoured and filled significantly by high flows resulting from both the Cerro Grande and Las Conchas fires.

Rating No. 4 was based on a step-backwater survey conducted on November 18, 2011, following major channel aggradation during an August 21, 2011, runoff event. Steep slopes in the gaging station reach and throughout the region cause considerable movement of material as either scours or fills. Rating No. 5 was developed in 2015.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the inside gage height to Rating No. 5.

E252 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	E[a]	E	0	0
2	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
3	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
4	<0.01	<0.01	0	<0.01	0.01	<0.01	0.01	0.01	E	E	0	0
5	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
6	<0.01	<0.01	0	<0.01	<0.01	0	0.01	0.01	E	E	0	0
7	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
8	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
9	<0.01	<0.01	0	<0.01	<0.01	<0.01	0.01	0.01	E	E	0	0
10	<0.01	<0.01	0	0	I[b]	0.01	0.01	0.01	E	E	0	0
11	<0.01	<0.01	<0.01	<0.01	I	0.01	0.01	0.01	E	E	0	0
12	0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	E	E	0	0
13	<0.01	<0.01	<0.01	<0.01	<0.01	0	0.01	0.01	E	E	0	0
14	0.01	<0.01	<0.01	<0.01	<0.01	0	0.02	0.01	E	E	0	0
15	<0.01	<0.01	<0.01	<0.01	0	<0.01	0.02	0.01	E	E	0	0
16	0.01	<0.01	<0.01	I	0	<0.01	0.01	0.01	E	E	0	0
17	<0.01	<0.01	<0.01	I	0	<0.01	0.01	0.01	E	E	0	0
18	<0.01	<0.01	<0.01	<0.01	0	0.01	0.01	0.01	E	E	0	0
19	<0.01	<0.01	<0.01	<0.01	0	<0.01	0.01	0.01	E	E	0	0
20	<0.01	<0.01	0	<0.01	0	<0.01	0.01	<0.01	E	E	0	0
21	<0.01	I	0	<0.01	<0.01	0.01	0.01	<0.01	E	E	0	0
22	<0.01	I	0	<0.01	<0.01	0.01	0.01	<0.01	E	E	0	0
23	<0.01	0	I	<0.01	<0.01	0.01	0.01	<0.01	E	E	0	0
24	<0.01	<0.01	I	<0.01	<0.01	0.01	0.01	<0.01	E	E	0	0
25	<0.01	0.01	I	<0.01	<0.01	0.01	0.01	<0.01	E	0	0	0
26	<0.01	0.01	I	<0.01	<0.01	0.01	0.01	<0.01	E	0	0	0
27	<0.01	I	I	<0.01	<0.01	0.01	0.01	E	E	0	0	0
28	I	I	I	<0.01	<0.01	0.01	0.01	E	E	0	0	0
29	<0.01	I	I	<0.01	<0.01	0.01	0.01	E	E	0	0	0
30	<0.01	<0.01	<0.01	<0.01		0.01	0.01	E	E	0	0	0
31	<0.01		<0.01	<0.01		0.01		E		0	0	

[a] E = Equipment malfunction.

[b] I = Ice or snow present in channel.

E252 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0.11	0.06	0.01	0.03	0.03	0.16	0.55	0.28	E*	E	0	0	1.2
Max Daily Peak (ft^3/s)	0.01	0.01	0	0	0.01	0.01	0.02	0.01	E	E	0	0	0.02
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	1	5	7	2	2	0	0	5	30	24	0	0	76

*E = Equipment malfunction.

E253 Cañon de Valle above SR 501

Location. Lat 35° 51’ 6”, Long –106° 21’ 17”, NE ¼, Sec. 25, T. 19 N., R. 5 E., Los Alamos County in Santa Fe National Forest.

Drainage Area. 2.27 mi^2.

Period of Record. October 1994 to June 2000 (gaging station destroyed by flood); January 31, 2001, to September 30, 2020.

Revised Record. Period of record (2012).

Gage. Data logger and 120-degree weir plate, rain gage with radio telemetry. Elevation of gage is 7707 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 31 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1450 ft^3/s, August 21, 2011, gage height 10 ft.

Maximum Discharge for WY 2020. Maximum discharge, 0.07 ft^3/s, April 14, 2020, gage height 2.75 ft.

E253 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system. The system is powered by a solar-panel battery system housed in a NEMA shelter on a 24-in. CMP well, 16 ft long attached to a 60-ft metal walkway. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft steel storage box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stage.

The station is also equipped with a rain gage. The tipping bucket rain gage, Rain Collection II, was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on March 7, 2019. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. None. The levels were run on April 16, 2001, when the gaging station was reestablished.

Gage-Height Record. The data logger referenced to the inside staff gage and reference point gave a complete and satisfactory record, except January 9–14, 2020, when the equipment malfunctioned; January 15–31, 2020; February 1–16, 2020; March 18–19, 2020; and April 12–13, when the gage was affected by ice and snow.

Rating. The channel at the gaging station is about 8 ft wide and straight for about 50 ft upstream, then bends to the left and straight for 100 ft downstream and bends to the right. The streambed through this reach is primarily gravel with cobbles. The low-flow control is a 120-degree sharp-crested weir. The channel becomes the control at high flow.

Rating No. 4 was developed from PZF measurement levels on October 28, 2011. Stage values were adjusted +0.10 for each discharge to continue to match the v-notch weir table.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 4.

E253 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	I[a]	0.04	0.04	0.04	0	0	0	0
2	0	0	0	0	I	0	0.04	0.04	0	0	0	0
3	0	0	0	0	I	0	0.04	0	0	0	0	0
4	0	0	0	0	I	0	0.04	0.04	0.04	0	0	0
5	0	0	0	0	I	0	0.04	0.04	0	0	0	0
6	0	0	0	0	I	0	0.04	0.04	0	0	0	0
7	0	0	0	0	I	0	0.04	0.04	0	0	0	0
8	0	0	0	0	I	0	0	0	0.04	0.04	0.04	I
9	0	0	0	E[b]	I	0	0.04	0	0.04	0.04	0	I
10	0	0	0	E	I	0	0.04	0	0	0.04	0	0
11	0	0	0	E	I	0	0.04	0	0	0.04	0	0
12	0	0	0	E	I	0	I	0.04	0	0	0	0
13	0	0	0	E	I	0	I	0.04	0	0	0	0
14	0	0	0	E	I	0	0.07	0.04	0	0	0	0
15	0	0	0	I	I	0	0.04	0.04	0	0	0	0.04
16	0	0	0	I	I	0	0.04	0.04	0	0	0.04	0.04
17	0	0	0	I	0	0	0.04	0.04	0.04	0	0	0.04
18	0	0	0	I	0	I	0.04	0.04	0.04	0	0	0.04
19	0	0	0	I	0	I	0	0	0.04	0	0	0.04
20	0	0	0	I	0	0	0	0	0.04	0	0	0.04
21	0	0	0	I	0	0	0	0.04	0.04	0	0	0
22	0	0	0	I	0	0	0	0.04	0	0	0	0.04
23	0	0	0	I	0	0	0.04	0.04	0	0	0	0.04
24	0	0	0	I	0.04	0	0	0.04	0	0	0	0.04
25	0	0	0	I	0.04	0	0	0	0	0	0	0
26	0	0	0	I	0.04	0	0	0	0	0	0	0.04
27	0	0	0	I	0.04	0	0	0	0.04	0	0	0.04
28	0	0	0	I	0	0.04	0.04	0	0.04	0	0	0
29	0	0	0	I	0.04	0	0	0.04	0	0.04	0	0
30	0	0	0	I		0	0	0	0.04	0.04	0	0
31	0		0	I		0.04		0		0.04	0	

[a] I = Ice or snow present in channel.

[b] E= Equipment malfunction.

E253 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0	0	0	I[a,b]	I	0	0.01	0.01	0.02	0.01	0.01	0.01	0.07
Max Daily Peak (ft^3/s)	0	0	0	I	I	0.04	0.07	0.04	0.04	0.04	0.04	0.04	0.15
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	18	16	2	2	0	0	0	0	2	30

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E256 Cañon de Valle below MDA P

Location. Lat 35° 51’ 01”, Long –106° 19’ 56.4”, Sec. 29, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 3.25 mi^2.

Period of Record. January 24, 2002, to August 21, 2011; August 15, 2014, to September 30, 2020.

Revised Record. Period of record (2014).

Gage. Data logger and 24-in. Parshall flume. Elevation of gage is 7329 ft above NGVD 29 from global positioning system survey.

Average Volume. 7 yr, 44 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 1024 ft^3/s, August 21, 2011, estimated with high-water-mark survey.

Maximum Discharge for WY 2020. Maximum discharge, 1.0 ft^3/s, March 13, 2020, gage height 0.53 ft.

E256 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval) and a Sutron Accubar bubble sensor within a 24-in. Parshall flume. The system is powered by a solar-panel battery system housed in a NEMA shelter on the left bank. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. An outside staff gage is available for reference. No provision has been made for discharge measurements above the wading stage. During the August 21, 2011, severe storm event, the bubbler line was destroyed along with the shelter, the data logger, and associated ISCO intake suction lines. The gage was deemed unusable. The gage site was rebuilt in August 2014.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the inside staff gage gave a complete and satisfactory record, except December 20, 22, 2019; January 10–22, 2020, when the gage was affected by ice and snow.

Rating. The channel is straight for 50 ft upstream and 20 ft downstream from the gaging station. The streambed consists of sand with gravel and is subject to filling behind the flume from flow events and gaging station silting problems. The banks are covered with vegetation. Rating No. 1 is based on the 24-in. Parshall flume. The rating curve was extrapolated to accommodate the peak stage of 3.75 ft.

No discharge measurements were made during the year.

Discharge. Discharge was computed by applying the gage height to Rating No. 1 using variable shift.

E256 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0.06	0.12	0.06	0.18	0.12	0	0	0	0	0
2	0	0	0.04	0.07	0.04	0.18	0.12	0	0	0	0	0
3	0	0	0.06	0.12	0.02	0.15	0.09	0	0	0	0	0
4	0	0	0.07	0.07	0.04	0.18	0.09	0	0	0	0	0
5	0	0	0.07	0.07	0.04	0.18	0.09	0	0	0	0	0
6	0	0	0.07	0.06	0.02	0.18	0.07	0	0	0	0	0
7	0	0	0.06	0.06	0.02	0.25	0.07	0	0	0	0	0
8	0	0	0.15	0.07	0.02	0.28	0.07	0	0	0	0	0
9	0	0	0.15	0.15	0.04	0.28	0.06	0	0	0	0	0
10	0	0	0.09	I*	0.04	0.28	0.06	0	0	0	0	0
11	0	0	0.07	I	0.06	0.32	0.06	0	0	0	0	0
12	0	0	0.07	I	0.06	0.28	0.06	0	0	0	0	0
13	0	0	0.07	I	0.09	1.0	0.09	0	0	0	0	0
14	0	0	0.09	I	0.09	0.44	0.09	0	0	0	0	0
15	0	0.01	0.09	I	0.06	0.32	0.09	0	0	0	0	0
16	0	0	0.09	I	0.07	0.25	0.07	0	0	0	0	0
17	0	0	0.06	I	0.09	0.21	0.06	0	0	0	0	0
18	0	0	0.02	I	0.12	0.32	0.04	0	0	0	0	0
19	0	0	0.02	I	0.12	0.36	0.04	0	0	0	0	0
20	0	0.02	I	I	0.12	0.32	0.04	0	0	0	0	0
21	0	0.06	0.63	I	0.09	0.25	0.02	0	0	0	0	0
22	0	0.04	I	I	0.36	0.25	0.02	0	0	0	0	0
23	0	0.04	0.25	0.04	0.36	0.21	0.02	0	0	0	0	0
24	0	0.02	0.15	0.04	0.25	0.21	0.02	0	0	0	0	0
25	0	0.02	0.18	0.02	0.18	0.21	0.01	0	0	0	0	0
26	0	0.02	0.18	0.02	0.15	0.21	0.01	0	0	0	0	0
27	0	0.02	0.25	0.02	0.09	0.18	0.01	0	0	0	0	0
28	0	0.04	0.21	0.02	0.12	0.18	0.01	0	0	0	0	0
29	0	0.12	0.15	0.04	0.15	0.15	0	0	0	0	0	0
30	0	0.09	0.15	0.02		0.15	0	0	0	0	0	0
31	0		0.12	0.04		0.12		0		0	0	

*I = Ice or snow present in channel.

E256 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total Volume (acre-ft)	0	0.64	5.1	1.45	3.5	13	2.7	0	0	0	0	0	26
Max Daily Peak (ft^3/s)	0	0.12	0.63	0.15	0.36	1.0	0.12	0	0	0	0	0	1.0
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	2	13	0	0	0	0	0	0	0	0	15

E265 Water Canyon below SR 4

Location. Lat 35° 48’ 18”, Long –106° 14’ 31”, Sec. 7, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 13.11 mi^2.

Period of Record. October 1993 to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry and stabilized natural rock control. Elevation of gage is 6311 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 32 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 2560 ft^3/s, September 13, 2013, gage height 6.23 ft.

Maximum Discharge for WY 2020. Maximum discharge, 13 ft^3/s, August 29, 2020, gage height 0.83 ft.

E265 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system, which was replaced with an OTT RLS radar sensor on December 6, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter on a 24-in. CMP well. The station is equipped with one ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-in. metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage.

The station is also equipped with a tipping bucket rain gage. All equipment is powered with a solar-panel battery-charging system.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record for the year, except November 29–30, 2019; December 3–12 and 24–29, 2019; January 16–31, 2020; February 1–17, 2020 and September 8–9, 2020, when the gage was affected by ice and snow.

Rating. The channel is straight for 100 ft above and below the gaging station. The banks are low and have very little vegetation. The streambed is mostly rock with lenses of sand.

Rating No. 5 was used for the entire water year.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 5.

E265 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.01	0	0	I*	0	0	0	0	0	0	0
2	0	0.01	0	0	I	0	0	0	0	0	0	0.50
3	0	0	I	I	I	0	0	0	0	0.01	0	0
4	0.87	0	I	0	I	0	0	0	0	0	0	0
5	0.04	0	I	0	I	0	0	0	0	0.19	0.06	0
6	0	0	I	0	I	0	0	0	0.12	0	0.05	0
7	0	0	I	0	I	0	0	0	0	0	0.01	0
8	0	0	I	0	I	0.03	0	0	0	0	0.01	I
9	0	0	I	0	I	0	0	0	0	0	0.01	I
10	0	0	I	0	I	0	0	0	0	0	0	0.06
11	0	0	I	0	I	0	0	0.10	0	0	0.02	0.02
12	0	0	I	0	I	0	0	0	0	0	0.02	0
13	0	0	0	0	I	0.55	0.10	0	0	0	0	0.01
14	0	0	0	0	I	0	0	0	0	0.10	0	0
15	0	0	0	0	I	0	0	0	0	0.01	0	0.01
16	0	0	0	I	I	0.05	0	0	0	0.03	0	0
17	0	0	0	I	I	0	0	0	0	0.04	0.01	0
18	0	0	0	I	0	0.60	0	0	0	0.05	0.01	0
19	0	0	0	I	0	0.65	0	0	0	0.01	0.01	0
20	0	I	0	I	0	0.04	0	0	0	0	0	0
21	0	I	0	I	0	0.02	0	0	0	0	0	0
22	0	I	0	I	0.04	0	0	0	0	0	0.01	0
23	0	0	0	I	0.06	0	0	0	0.08	0	0.01	0
24	0.05	0	I	I	0	0	0	0	0	0	0.01	0
25	0	0	I	I	0	0	0	0.10	0	0.16	0.01	0
26	0	0.04	I	I	0	0	0	0	0	0	0	0
27	0	0.02	I	I	0	0.02	0	0	0	0.22	0	0
28	0.28	0.05	I	I	0	0	0	0	0	0.87	0.16	0
29	0	I	0	I	0	0	0	0	0	0	13	0
30	0	I	0	I		0	0	0.14	0	0	2.4	0
31	0		0	I		0		0		0	2.4	

*I = Ice or snow present in channel.

E265 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	0.50	0.01	0.05	I[a,b]	I	0.50	0.07	0.04	0.04	0.38	7.3	0.03	9.6
Max Daily Peak (ft^3/s)	0.87	0.05	0	I	I	0.65	0.10	0.14	0.12	0.87	13	0.50	13
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	5	15	16	17	0	0	0	0	0	2	2	57

[a] I = Ice or snow present in channel.

[b] Monthly summary is not calculated for months with mostly missing data.

E267 Potrillo Canyon above SR 4

Location. Lat 35° 48’ 48”, Long –106° 14’ 00”, Sec. 6, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 2.26 mi^2.

Period of Record. October 1, 1995, to September 30, 2020.

Revised Record. LA-13551-PR (1998): Station number. Drainage area (2006).

Gage. Data logger with radio telemetry and concrete control. Elevation of gage is 6455 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 8 yr, 1 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 99 ft^3/s, September 13, 2013, gage height 2.94 ft.

Maximum Discharge for WY 2020. No measureable discharge for the water year.

E267 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a shaft encoder float system. The system is powered by a solar-panel battery system housed in a NEMA shelter on an 18-in. CMP well. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3-× 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for direct discharge measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside staff gage gave a complete and satisfactory record.

Rating. The channel is fairly straight for 300 ft above the gaging station and 150 ft below. The streambed is mostly sand. The brush is thick along the stream bank. The control is a concrete broad-crested weir. The original shape and definition of the rating was derived by computation using weir geometry with the slope–area method used to define peak discharge and slope of the upper end.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 2.

E267 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

E267 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0	0

Ancho/Chaquehui Watershed

Ancho Canyon is located in the southeastern portion of LANL and originates on LANL property in TA-49 at an elevation of approximately 7285 ft. The watershed extends southeast across LANL and enters the Rio Grande along the boundary between TA-33 and TA-70 at an elevation of approximately 5410 ft. Ancho Canyon is joined by North Ancho Canyon before it flows into the Rio Grande. The area of Ancho watershed is approximately 6.8 mi^2, and it has a channel length of 7.3 mi. Stream flow in Ancho Canyon is ephemeral over most of the canyon length, until about 0.8 mi upstream of the confluence with the Rio Grande, where Ancho Spring is located. This perennial spring supports perennial flow for a very short segment of the canyon where it converges with the Rio Grande.

Chaquehui Canyon originates in Bandelier National Monument at an elevation of 6580 ft. The watershed begins at the northeast corner of the monument, extending 0.4 mi before entering LANL property at the northwestern corner of TA-33 and trends southeast. The watershed continues across 2 mi of TA-33 and enters the Rio Grande at an elevation of 5370 ft. The area of the Chaquehui watershed is approximately 1.6 mi^2. Stream flow in Chaquehui Canyon is ephemeral.

Figure 8 shows the total monthly volume of discharge for the three stream gaging stations within the Ancho Canyon and Chaquehui Canyon watersheds.

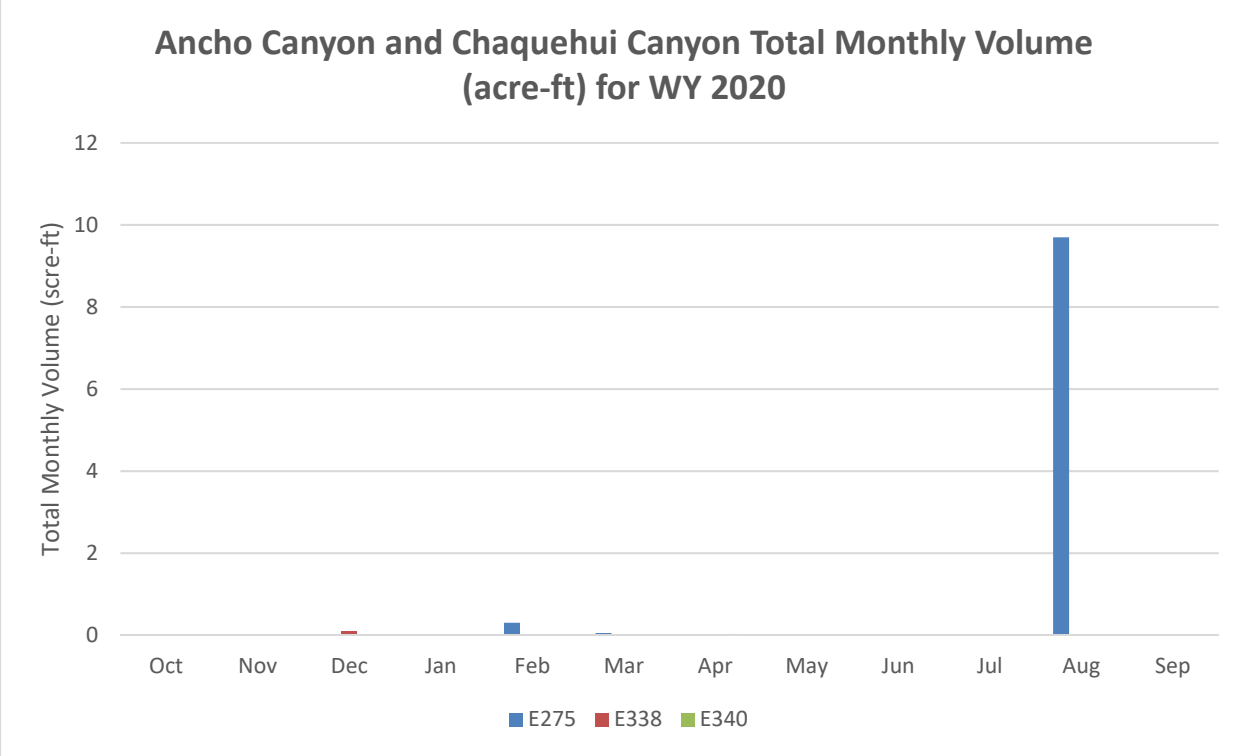


Figure 8 Total monthly volume (acre-ft) for WY 2020 in Ancho Canyon and Chaquehui Canyon

E275 Ancho Canyon below SR 4

Location. Lat 35° 46’ 54”, Long –106° 14’ 42”, Sec. 19, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 4.75 mi^2.

Period of Record. December 1993 to September 30, 2020.

Revised Record. Drainage area (2006).

Gage. Data logger with radio telemetry and concrete stabilized natural control. Elevation of gage is 6193 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 9 yr, 32 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge, 536 ft^3/s, August 4, 2008, estimated from high-water-mark survey.

Maximum Discharge for WY 2020. Maximum discharge, 414 ft^3/s, August 29, 2020, gage height 2.68 ft.

E275 Stream gaging station upstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor, which replaced a shaft encoder float system on February 21, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO pump sampler to collect water-quality samples. The ISCO sampler is housed in a separate shelter, a 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the outside gage gave a complete and satisfactory record for the year, except November 28–30, 2019; December 1–5, 2020; and January 16–23, 2020, when the gage was affected by ice and snow.

Rating. The streambed is a series of outcrops and sand pockets with moderate sand movement during flow events. The high-water channel is straight for 200 ft upstream. Flow below the gaging station becomes supercritical as the fall increases radically below the station. A quarter-mile upstream the channel has very low banks and the stream may spread out to large widths. The channel contracts markedly from there to the gaging station. The control is a natural rock outcrop stabilized by concrete.

Rating No. 1 was developed from the PZF, previous measurement, and slope area method.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 1.

E275 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I[a]	0	0	0.07	0	0	0	0	0	0
2	0	0	I	0	0	0.14	0	0	0	0	0	0
3	0	0	I	0	0	0.02	0	0	0	0	0	0
4	0	0	I	0	0	0.04	0	0	0	0	0	0
5	0	0	I	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0.02	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	M[b]	0	0	0
12	0	0	0	0	0.54	0	0	0	M	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0.02	0	0	0	0	0	0	0
16	0	0	0	I	0	0	0	0	0	0	0	0
17	0	0	0	I	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0.07	0	0	0	0	0	0	0
20	0	0	0	I	0.09	0	0	0	0	0	0	0
21	0	0	0	I	0.07	0	0	0	0	0	0	0
22	0	0	0	I	0.02	0	0	0	0	0	0	0
23	0	0	0	I	0.09	0	0	0	0	0	0	0
24	0	0	0	0	0.05	0	0	0	0	0	0	0
25	0	0	0.05	0	0.19	0	0	0	0	0	0	0
26	0	0	0	0	0.02	0	0	0	0	0	0	0
27	0	0	0	0	0.04	0	0	0	0	0	0	0
28	0.04	I	0	0	0.05	0	0	0	0	0	0	0
29	0	I	0	0	0.07	0	0	0	0	0	414	0
30	0	I	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

[a] I = Ice or snow present in channel.

[b] M = Missing data.

E275 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	0	0	0	0	0.30	0.05	0	0	0	0	9.7	0	10
Max Daily Peak (ft^3/s)	0.04	0	0.05	0	0.54	0.14	0	0	0	0	414	0	414
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	3	4	8	0	0	0	0	2	0	0	0	17

E338 Chaquehui at TA-33

Location. Lat 35° 46’ 11”, Long –106° 15’ 7”, Sec. 19, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 12.18 mi^2.

Period of Record. October 1, 1999, to January 8, 2001; October 4, 2001, to September 30, 2020.

Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6227 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 8 yr, 6 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge 239 ft^3/s, September 13, 2013, gage height 2.98 ft.

Maximum Discharge for WY 2020. Maximum discharge 0.09 ft^3/s, February 13, 2020, gage height 4.03 ft.

E338 Stream gaging station downstream view

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and an OTT RLS radar sensor, which replaced a Milltronics sonic probe on February 5, 2018. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO sampler (one 12-count 1-L glass and polyethylene bottle sampler) to collect water-quality samples. The ISCO sampler is housed in a separate 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the inside staff gage gave a complete and satisfactory record, except November 28–29, 2019; December 2–3, and 25, 2019; January 16–23, 2020; and February 13, 2020, when the gage was affected by ice and snow.

Rating. The channel makes a 30-degree turn approximately 25 ft upgrade from the staff plate and then runs straight downgrade for 80 ft. The channel is confined by steep cutbanks on both sides that should remain stable with flows confined within the channel. The channel bottom is approximately 4 ft wide and made up of fine sand and pumice cobble. The control is the open channel.

Rating No. 1 was developed from previous measurement and slope-area.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 1.

E338 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	I*	0	0	0	0	0	0	0	0	0
3	0	0	I	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	I	0	0	0	0	0	0	0
13	0	0	0	0	0.09	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	I	0	0	0	0	0	0	0	0
17	0	0	0	I	0	0	0	0	0	0	0	0
18	0	0	0	I	0	0	0	0	0	0	0	0
19	0	0	0	I	0	0	0	0	0	0	0	0
20	0	0	0	I	0	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	I	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	I	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	I	0	0	0	0	0	0	0	0	0	0
29	0	I	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

*I = Ice or snow present in channel.

E338 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Daily Peak (ft^3/s)	0	0	0	0	0.09	0	0	0	0	0	0	0	0.09
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	2	3	8	1	0	0	0	0	0	0	0	14

E340 Chaquehui Tributary at TA-33

Location. Lat 35° 46’ 46”, Long –106° 15’ 1”, Sec. 19, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Drainage Area. 1.33 mi^2.

Period of Record. February 7, 2001, to October 14, 2003; May 14, 2004, to September 30, 2020.

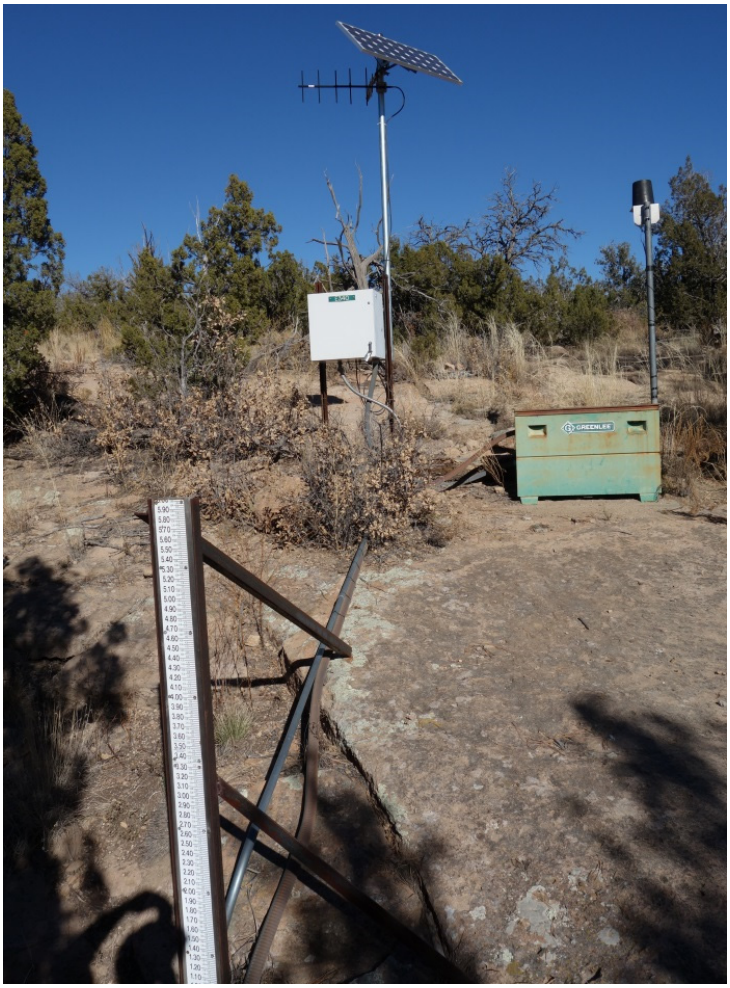
Revised Record. None.

Gage. Data logger with radio telemetry. Elevation of gage is 6423 ft using LANL LIDAR DEM with NAD 83.

Average Volume. 8 yr, 1 acre-ft/yr.

Maximum Discharge for Period of Record. Maximum discharge 38 ft^3/s, September 14, 2013, gage height 1.2 ft.

Maximum Discharge for Current WY 2018. Maximum discharge 0.61 ft^3/s, April 13, 2020, corrected gage height 0.04 ft.



E340 Stream gaging station, downstream to the right

Equipment. The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accubar bubbler sensor. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with an ISCO sampler (one 12-count 1-L glass and polyethylene bottle sampler) to collect water-quality samples. The ISCO sampler is housed in a separate 3- × 4-ft metal box. The sampler is triggered by stage through the data logger. An outside staff gage is available for reference. No provision has been made for measurements above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

Datum Correction. None.

Gage-Height Record. The data logger referenced to the inside staff gage gave a complete and satisfactory record for the year, except January 13–14, 2020, when maintenance was performed; and January 16–31, 2020; and February 1–20, 2020, when the gage was affected by ice and snow.

Rating. The channel zigzags downslope while dropping off low bedrock shelves into sandy bottoms both above and below the gaging station. The channel maintains approximately a 3-ft width while being contained by soil banks that may erode with heavy flows but otherwise remain stable with low flows. The control is a bedrock open channel and is very stable at the staff plate.

Rating No. 1 was developed from previous measurement and slope-area.

No discharge measurements were made during the year.

Discharge. Discharge was computed by directly applying the gage height to Rating No. 1.

E340 Daily Peak Discharge (ft^3/s) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	I[a]	0	0	0	0	0	0	0
2	0	0	0	0	I	0	0	0	0	0	0	0
3	0	0	0	0	I	0	0	0	0	0	0	0
4	0	0	0	0	I	0	0	0	0	0	0	0
5	0	0	0	0	I	0	0	0	0	0	0	0
6	0	0	0	0	I	0	0	0	0	0	0	0
7	0	0	0	0	I	0	0	0	0	0	0	0
8	0	0	0	0	I	0	0	0	0	0	0	0
9	0	0	0	0	I	0	0	0	0	0	0	0
10	0	0	0	0	I	0	0	0	0	0	0	0
11	0	0	0	0	I	0	0	0	0	0	0	0
12	0	0	0	0	I	0	0	0	0	0	0	0
13	0	0	0	T[b]	I	0	0.61	0	0	0	0	0
14	0	0	0	T	I	0	0	0	0	0	0	0
15	0	0	0	0	I	0	0	0	0	0	0	0
16	0	0	0	I*	I	0	0	0	0	0	0	0
17	0	0	0	I	I	0	0	0	0	0	0	0
18	0	0	0	I	I	0	0	0	0	0	0	0
19	0	0	0	I	I	0	0	0	0	0	0	0
20	0	0	0	I	I	0	0	0	0	0	0	0
21	0	0	0	I	0	0	0	0	0	0	0	0
22	0	0	0	I	0	0	0	0	0	0	0	0
23	0	0	0	I	0	0	0	0	0	0	0	0
24	0	0	0	I	0	0	0	0	0	0	0	0
25	0	0	0	I	0	0	0	0	0	0	0	0
26	0	0	0	I	0.30	0	0	0	0	0	0	0
27	0	0	0	I	0.30	0	0	0	0	0	0	0
28	0	0	0	I	0.15	0	0	0	0	0	0	0
29	0	0	0	I	0	0	0	0	0	0	0	0
30	0	0	0	I		0	0	0	0	0.15	0	0
31	0		0	I		0		0		0	0	

[a] I = Ice or snow present in channel.

[b] T = Testing or maintenance performed.

E340 Monthly Summary Table WY 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
Total (acre-ft)	0	0	0	0	I[a,b]	0	0.03	0	0	0	0	0	0.03
Max Daily Peak (ft^3/s)	0	0	0	I	I	0	0.61	0	0	0.15	0	0	0.61
Min Daily Peak (ft^3/s)	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing Days	0	0	0	18	20	0	0	0	0	0	0	0	38

[a] I = Ice or snow present in channel.

[b] Monthly totals are not computed for months with most days missing.

PRECIPITATION GAGING STATIONS

Data Collection and Computation

A complete record at a precipitation gaging station consists of precipitation measurements directly observed using a tipping bucket. There were 5-min records of precipitation provided from a data logger, validated, and archived. The total daily precipitation is a sum of the 5-min precipitation records for the calendar day.

Accuracy of Records

The number of significant figures used to report daily precipitation is based solely on measured precipitation to the nearest hundredth.

Factors that affect the accuracy of the precipitation record include the following:

- Debris in the tipping bucket
- Precipitation in the form of hail or snow

Data Presentation

The records published in this report consist of two parts for each precipitation gaging station:

- Station analysis summary with photo when available
- Data table for the water year (October 1, 2019, to September 30, 2020)

The station analysis supplements each daily values table and includes a description of gaging station location, the period of record, gaging station information, a description of monitoring equipment, fieldwork visits, the maximum daily total precipitation for the period of record and the current monsoon season, and a description of the precipitation record.

Location: The most accurate and available maps, coupled with LIDAR DEM using NAD 83, provide location information.

Period of Record: The period of record is the time during which published records exist for a station or its equivalent station. An equivalent station is one that was in operation when the present station was not in operation and was located so its records can be reasonably considered equivalent to records from the present station.

Gage: This section describes the datum of the current gage referred to in NAD 83.

Equipment: This section describes the equipment located at each site.

Maximum Daily Total Precipitation for Period of Record: The record includes the maximum daily precipitation. Unless otherwise qualified, the maximum precipitation is the total daily maximum.

Maximum Daily Total Precipitation for Current Monsoon Season: Maximums given are similar to those for the period of record. The time for daily totals is expressed in 24-hr local standard time.

Precipitation Record: The precipitation record includes the periods when the gaging station was shut down for winterization and when the record was incomplete because of problems with data collection.

The monthly total precipitation tables record the total monthly precipitation from October 2019 to September 2020. The row titled “Total (in.)” contains the sum of the daily precipitation for each month in inches, the row titled “Mean Total for Period of Record (in.)” contains the mean total for each month in inches, the row titled “Max Daily Total (in.)” contains the maximum daily total precipitation for each month in inches, and the row titled “Missing Days” contains the number of days missing for each month.

The table below shows the total precipitation for May 1 to September 30, 2020. Most of the annual precipitation occurs during the monsoon season. The column titled “Days with Rain” shows the total number of days precipitation occurred during this period for each gaging station. The column titled “Total Precipitation” contains the sum of the daily precipitation for this period for each precipitation gaging station.

Precipitation Summary for Monsoon Season, May 1, 2020–September 30, 2020

Precipitation Gaging Station	Days with Rain 2020	Total Precipitation 2020 (in.)	Maximum Daily Total Precipitation 2020 (in.)	Elevation (ft)
E038	35	4.7	0.61	7087
E042.1	28	2.59	0.52	6379
R055.5	42	4.37	0.57	7102
E121.9	39	5.07	0.65	7336
E200.5	30	4.21	0.72	7214
E203	34	5.23	0.64	6817
E240	38	5.34	0.53	7719
E245.5	33	4.28	0.56	6796
E253	37	6.79	0.69	7719
E257	39	6.59	0.86	7360
E262.4	35	5.4	0.98	7124
E265	31	4.19	0.92	6311
E267.4	30	4.14	0.87	6865
E340	29	3.23	0.72	6423
TA-06	36	6.0	0.79	7423
TA-49	37	5.05	0.99	7045
TA-53	29	4.05	0.55	6992
TA-54	28	3.49	0.91	6553
North Community	40	4.45	0.37	7414

Extended Precipitation Network

Measurement, collection, and management of precipitation data and calculated results are required by LANL’s National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (NMR05GB21), the Construction General Permit, and the NPDES Individual Permit for Storm Water Discharge from Solid Waste Management Units and Areas of Concern (NM0030759), issued to LANL by the U.S. Environmental Protection Agency (EPA). The precipitation data are also used by Consent Order and environmental surveillance storm water projects to guide field activities such as monitoring station inspections and sample retrieval. The use of the extended rain gage network allows the storm water

projects to optimize field team response to only those areas where precipitation likely resulted in runoff or exceeded a pre-established trigger amount.

The extended precipitation network consists of 14 precipitation gaging stations. The gaging stations collect 5-min precipitation data in tipping buckets. The network is active from April to November when precipitation as rain is most likely to occur on the Pajarito Plateau. Each precipitation gaging station is named after its collocated or formerly collocated stream gaging station per the USGS Water Resources Division's naming convention previously described in the stream discharge gaging station section of this report.

Figure 9 shows the total monthly precipitation for the 14 extended network gaging stations from October 2019 to September 2020, with December to March omitted because the gaging stations were shut down for winter.

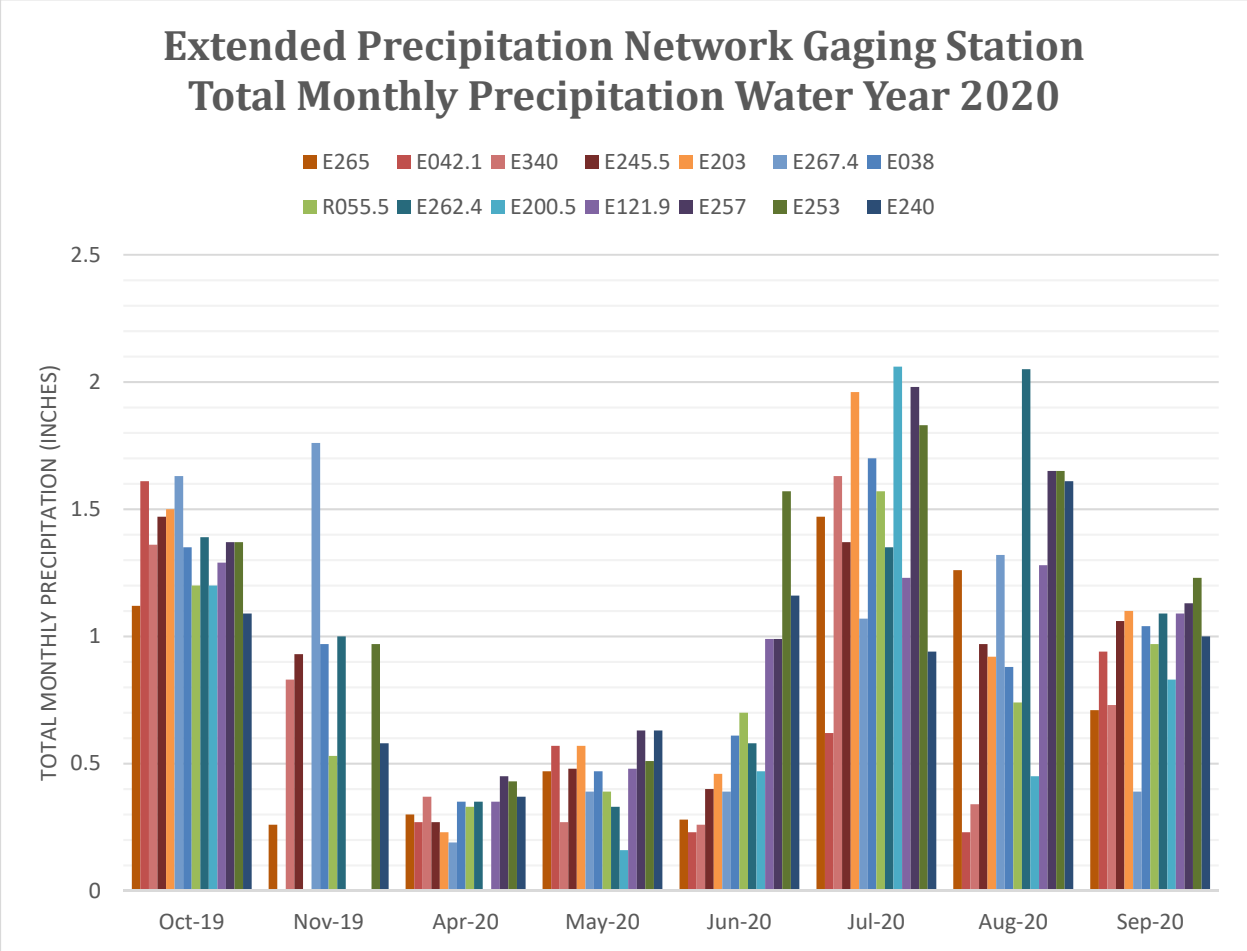


Figure 9 Total monthly precipitation for the extended precipitation network gaging stations for WY 2020, excluding December 2019 to March 2020, when the gaging stations were shut down for winter

E038 DP Canyon above TA-21

Location. Lat 35° 52’ 49”, Long –106° 16’ 58”, SW ¼, Sec. 14, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. April 23, 2008, to September 30, 2020.

Gage. Elevation of gage is 7087 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.08 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.00 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on April 3, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 29, 2019, to March 12, 2020, when the gaging station was shut down for winter.

E038 Precipitation gaging station

E038 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.24	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.04	0
3	0	0	IA	IA	IA	IA	0	0	0	0.02	0.07	0
4	1.00	0	IA	IA	IA	IA	0	0	0	0.01	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.26	0	0.01
6	0	0	IA	IA	IA	IA	0	0	0.29	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.31
9	0	0	IA	IA	IA	IA	0	0	0	0	0.12	0.61
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.09
11	0	0	IA	IA	IA	IA	0	0.02	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.82	0.10	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.25	0	0.18	0.05	0	0
15	0	0	IA	IA	IA	0	0	0	0.02	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.26	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.14	0	0
18	0	0	IA	IA	IA	0.43	0	0	0	0.24	0	0
19	0	0	IA	IA	IA	0.21	0	0	0	0	0	0
20	0	0.33	IA	IA	IA	0.03	0	0	0	0	0	0
21	0	0.27	IA	IA	IA	0.01	0	0	0	0.09	0	0
22	0	0.36	IA	IA	IA	0	0	0	0	0	0	0
23	0	0.01	IA	IA	IA	0	0	0	0.05	0	0	0
24	0.18	0	IA	IA	IA	0	0	0	0	0.02	0	0
25	0	0	IA	IA	IA	0	0	0.24	0.07	0.08	0	0
26	0	0	IA	IA	IA	0	0	0	0	0.06	0	0
27	0	0	IA	IA	IA	0	0	0	0	0.44	0	0
28	0.17	0	IA	IA	IA	0	0	0.01	0	0.03	0.37	0.02
29	0	IA	IA	IA	IA	0	0	0.08	0	0	0.04	0
30	0	IA	IA	IA		0	0	0.09	0	0	0	0
31	0		IA	IA		0		0.03		0	0	

*IA = Inactive gage during seasonal shutdown.

E038 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.35	0.97	IA[b]	IA	IA	1.50	0.35	0.47	0.61	1.70	0.88	1.04
Mean Monthly Total for Period of Record (in.)	1.29	0.46	IA	IA	IA	IA	0.71	0.72	0.59	2.15	2.23	1.45
Max Daily Total (in.)	1.00	0.36	IA	IA	IA	0.82	0.25	0.24	0.29	0.44	0.37	0.61
Missing Days	0	2	31	31	29	12	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E042.1 Los Alamos above Low Head Weir

Location. Lat 35° 52’ 2”, Long –106° 13’ 25”, NW ¼, Sec. 20, T. 19 N., R. 7 E., Santa Fe County.

Period of Record. July 27, 2010, to September 30, 2020.

Gage. Elevation of gage is 6377 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.27 in. on September 12, 2013, estimated.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.10 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on May 22, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 20, 2019, to March 12, 2020, when the gaging station was shut down for winter.

E042.1 Precipitation gaging station

E042.1 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.01	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0.01	0.03	0
4	1.10	0	IA	IA	IA	IA	0	0	0	0	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.01	0	0
6	0	0	IA	IA	IA	IA	0	0	0.21	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0.01	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.30
9	0	0	IA	IA	IA	IA	0	0	0	0	0.01	0.52
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.11
11	0	0	IA	IA	IA	IA	0	0.01	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0.03	0	0
13	0	0	IA	IA	IA	0.64	0.22	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.05	0	0	0.02	0	0.01
15	0	0	IA	IA	IA	0	0	0	0.02	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.03	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.02	0	0
18	0	0	IA	IA	IA	0.49	0	0	0	0.07	0	0
19	0	0	IA	IA	IA	0.04	0	0	0	0	0	0
20	0	IA	IA	IA	IA	0.02	0	0	0	0	0	0
21	0	IA	IA	IA	IA	0	0	0	0	0.02	0	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0
23	0	IA	IA	IA	IA	0	0	0	0	0	0	0
24	0.36	IA	IA	IA	IA	0	0	0	0	0	0	0
25	0	IA	IA	IA	IA	0	0	0.06	0	0.08	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.03	0	0
27	0	IA	IA	IA	IA	0	0	0	0	0.25	0	0
28	0.15	IA	IA	IA	IA	0	0	0	0	0.02	0.13	0
29	0	IA	IA	IA	IA	0	0	0	0	0	0.04	0
30	0	IA	IA	IA		0	0	0.5	0	0	0	0
31	0		IA	IA		0		0		0.03	0	

*IA = Inactive gage during seasonal shutdown.

E042.1 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.61	0	IA[b]	IA	IA	1.19	0.27	0.57	0.23	0.62	0.23	0.94
Mean Monthly Total for Period of Record (in.)	1.28	0.49	IA	IA	IA	IA	0.68	0.80	0.48	1.88	1.80	1.70
Max Daily Total (in.)	1.10	0	IA	IA	IA	0.64	0.22	0.50	0.21	0.25	0.13	0.52
Missing Days	0	11	31	31	29	12	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

R055.5 South Fork of Acid Canyon

Location. Lat 35° 53’ 10”, Long –106° 18’ 26”, SE ¼, Sec. 9, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. July 29, 2008, to September 30, 2020.

Gage. Elevation of gage is 7102 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.26 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.03 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 22, 2019, to March 11, 2020, when the gaging station was shut down for winter.

R055.5 Precipitation gaging station

R055.5 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.09	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.14	0
3	0	0	IA	IA	IA	IA	0	IA	0	0.03	0.09	0
4	1.03	0	IA	IA	IA	IA	0	IA	0	0.01	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.38	0.01	0.04
6	0	0	IA	IA	IA	IA	0	0	0.25	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0.01	0
8	0	0	IA	IA	IA	IA	IA	0	0	0	0	0.3
9	0	0	IA	IA	IA	IA	IA	0	0	0	0.05	0.57
10	0	0	IA	IA	IA	IA	IA	0	0	0	0	0.05
11	0	0	IA	IA	IA	IA	0	0.04	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.86	0.27	0	0	0	0.01	0
14	0	0	IA	IA	IA	0	0.06	0	0.24	0.07	0	0
15	0	0	IA	IA	IA	0	0	0	0	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.03	0.01	0
17	0	0	IA	IA	IA	0	0	0	0	0.16	0	0
18	0	0	IA	IA	IA	0.33	0	0	0	0.39	0	0
19	0	0	IA	IA	IA	0.41	0	0	0	0	0	0
20	0	0.29	IA	IA	IA	0.04	0	0	0	0	0	0
21	0	0.24	IA	IA	IA	0.01	0	0	0	0.02	0	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0
23	0	IA	IA	IA	IA	0	0	0	0.05	0	0	0.01
24	0.01	IA	IA	IA	IA	0	0	0	0	0.03	0	0
25	0	IA	IA	IA	IA	0	0	0.09	0.16	0.07	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0.15	0.01	0
27	0	IA	IA	IA	IA	IA	0	0	0	0.18	0.01	0
28	0.16	IA	IA	IA	IA	IA	0	0.01	0	0.05	0.25	0
29	0	IA	IA	IA	IA	IA	0	0.16	0	0	0.05	0
30	0	IA	IA	IA		0	0	0.05	0	0	0.01	0
31	0		IA	IA		0		0.03		0	0	

*IA = Inactive gage during seasonal shutdown.

R055.5 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.20	0.53	IA[b]	IA	IA	1.65	0.33	0.39	0.70	1.57	0.74	0.97
Mean Total for Period of Record (in.)	1.58	0.49	IA	IA	IA	IA	0.73	0.94	0.91	3.07	2.58	1.95
Max Daily Total (in.)	1.03	0.29	IA	IA	IA	0.86	0.27	0.16	0.25	0.39	0.25	0.57
Missing Days	0	9	31	31	29	14	3	2	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E121.9 Sandia Canyon East of Power Plant

Location. Lat 35° 52’ 30”, Long –106° 19’ 10”, SW ¼, Sec. 16, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. May 2, 2007, to September 30, 2020.

Gage. Elevation of gage is 7336 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.35 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2018. 1.10 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on April 4, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 20, 2019, to March 11, 2020, when the gaging station was shut down for winter.

E121.9 Precipitation gaging station

E121.9 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.40	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.35	0
3	0	0	IA	IA	IA	IA	0	0	0	0.04	0.10	0
4	1.10	0	IA	IA	IA	IA	0	0	0	0.04	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.21	0	0.01
6	0	0	IA	IA	IA	IA	0	0	0.29	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.3
9	0	0	IA	IA	IA	IA	0	0	0	0	0.02	0.65
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.07
11	0	0	IA	IA	IA	IA	0	0.12	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0.01	0
13	0	0	IA	IA	IA	1.02	0.31	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.04	0	0.36	0.01	0	0
15	0	0	IA	IA	IA	0	0	0	0	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.04	0.03	0
17	0	0	IA	IA	IA	0	0	0	0	0.1	0	0
18	0	0	IA	IA	IA	0.33	0	0	0	0.22	0.01	0.04
19	0	0	IA	IA	IA	0.42	0	0	0	0	0	0
20	0	IA	IA	IA	IA	0.02	0	0	0	0	0	0
21	0	IA	IA	IA	IA	0.04	0	0	0	0	0	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0.02
23	0	IA	IA	IA	IA	0	0	0	0.06	0	0	0
24	0.02	IA	IA	IA	IA	0	0	0	0	0.05	0	0
25	0	IA	IA	IA	IA	0	0	0.11	0.28	0.18	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.12	0.04	0
27	0	IA	IA	IA	IA	0	0	0.01	0	0.18	0	0
28	0.17	IA	IA	IA	IA	0	0	0	0	0.03	0.29	0
29	0	IA	IA	IA	IA	0	0	0.18	0	0	0.03	0
30	0	IA	IA	IA		0	0	0.03	0	0	0	0
31	0		IA	IA		0		0.03		0.01	0	

*IA = Inactive gage during seasonal shutdown.

E121.9 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.29	0	IA[b]	IA	IA	1.83	0.35	0.48	0.99	1.23	1.28	1.09
Mean Total for Period of Record (in.)	1.52	0.43	IA	IA	IA	IA	0.85	1.02	0.93	2.98	2.52	2.25
Max Daily Total (in.)	1.10	0	IA	IA	IA	1.02	0.31	0.18	0.36	0.22	0.40	0.65
Missing Days	0	11	31	31	29	11	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E200.5 Mortandad Canyon Tributary Batch Plant at Sigma

Location. Lat 35° 51’ 57”, Long –106° 17’ 24”, NE ¼, Sec. 22, T.19 N., R. 6 E., Los Alamos County.

Period of Record. July 25, 2007, to September 30, 2020.

Gage. Elevation of gage is 7214 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.53 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.82 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on February 26, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 20, 2019, to March 12, 2020, when the gaging station was shut down for winter.

E200.5 Precipitation gaging station

E200.5 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.24	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.05	0
3	0	0	IA	IA	IA	IA	0	0	0	0.01	0.06	0
4	0.82	0	IA	IA	IA	IA	0	0	0	0.03	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.24	0	0
6	0	0	IA	IA	IA	IA	0	0	0.24	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.26
9	0	0	IA	IA	IA	IA	0	0	0	0	0.05	0.48
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.09
11	0	0	IA	IA	IA	IA	0	0	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.7	0	0	0	0	0	0
14	0	0	IA	IA	IA	0	0	0	0.16	0.05	0	0
15	0	0	IA	IA	IA	0	0	0	0	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.29	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.22	0	0
18	0	0	IA	IA	IA	0.36	0	0	0	0.32	0	0
19	0	0	IA	IA	IA	0.19	0	0	0	0	0	0
20	0	IA	IA	IA	IA	0.02	0	0	0	0	0	0
21	0	IA	IA	IA	IA	0.01	0	0	0	0	0	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0
23	0	IA	IA	IA	IA	0	0	0	0.04	0.01	0	0
24	0.25	IA	IA	IA	IA	0	0	0	0	0.09	0	0
25	0.03	IA	IA	IA	IA	0	0	0.01	0.03	0	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0.08	0	0
27	0	IA	IA	IA	IA	0	0	0.01	0	0.72	0	0
28	0.1	IA	IA	IA	IA	0	0	0	0	0	0.25	0
29	0	IA	IA	IA	IA	0	0	0.02	0	0	0.04	0
30	0	IA	IA	IA		0	0	0.1	0	0	0	0
31	0	IA	IA	IA		0		0.01		0	0	

*IA = Inactive gage during seasonal shutdown.

E200.5 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.20	0	IA[b]	IA	IA	1.28	0	0.16	0.47	2.06	0.69	0.83
Mean Total for Period of Record (in.)	1.20	0.42	IA	IA	IA	IA	0.56	0.71	0.50	2.78	2.09	1.84
Max Daily total (in.)	0.82	0	IA	IA	IA	0.70	0	0.10	0.24	0.72	0.25	0.48
Missing Days	0	12	31	31	29	12	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E203 Mortandad Canyon below Sediment Traps

Location. Lat 35° 51’ 39”, Long –106° 16’ 6”, SE ¼, Sec. 23, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. May 1, 2007, to September 30, 2020.

Gage. Elevation of gage is 6817 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.34 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.07 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on May, 17, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 20, 2019, to March 16, 2020, when the gaging station was shut down for winter.

E203 Precipitation gaging station

E203 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.21	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.01	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0.06	0
4	1.07	0	IA	IA	IA	IA	0	0	0	0.03	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.49	0	0.03
6	0	0	IA	IA	IA	IA	0	0	0.24	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.35
9	0	0	IA	IA	IA	IA	0	0	0	0	0.14	0.57
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.12
11	0	0	IA	IA	IA	IA	0	0.01	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	IA	0.10	0	0	0	0	0
14	0	0	IA	IA	IA	IA	0.13	0	0.13	0.05	0.01	0
15	0	0	IA	IA	IA	IA	0	0	0.04	0	0	0
16	0	0	IA	IA	IA	IA	0	0	0	0.37	0	0
17	0	0	IA	IA	IA	0.26	0	0	0	0.05	0	0
18	0	0	IA	IA	IA	0.59	0	0	0	0.29	0	0
19	0	0	IA	IA	IA	0.03	0	0	0	0	0	0
20	0	IA	IA	IA	IA	0.01	0	0	0	0	0	0
21	0	IA	IA	IA	IA	0.01	0	0	0	0	0	0.02
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0.01
23	0	IA	IA	IA	IA	0	0	0	0.05	0	0	0
24	0.23	IA	IA	IA	IA	0	0	0	0	0.12	0	0
25	0.07	IA	IA	IA	IA	0	0	0.27	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0.13	0	0
27	0	IA	IA	IA	IA	0	0	0.01	0	0.43	0	0
28	0.13	IA	IA	IA	IA	0	0	0	0	0	0.64	0
29	0	IA	IA	IA	IA	0	0	0.03	0	0	0.06	0
30	0	IA	IA	IA		0	0	0.23	0	0	0	0
31	0		IA	IA		0		0.01		0.01	0	

*IA = Inactive gage during seasonal shutdown.

E203 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.50	0	IA[b]	IA	IA	0.90	0.23	0.57	0.46	1.97	1.13	1.10
Mean Total for Period of Record (in.)	1.26	0.53	IA	IA	IA	IA	0.67	0.89	0.59	2.29	1.63	1.49
Max Daily total (in.)	1.07	0	IA	IA	IA	0.59	0.13	0.27	0.24	0.49	0.64	0.57
Missing Days	0	11	31	31	29	16	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E240 Pajarito Canyon below SR 501

Location. Lat 35° 52’ 02”, Long –106° 21’ 05”, NW ¼, Sec. 19, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. June 5, 2002, to September 30, 2020.

Gage. Elevation of gage is 7719 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.20 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2018. 0.96 in. on March 13, 2020.

Equipment. The station is equipped with a rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on March 5, 2019. All equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 22, 2019, to March 11, 2020, when the gaging station was shut down for winter.

E240 Precipitation gaging station

E240 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.49	0
3	0	0	IA	IA	IA	IA	0	0	0	0.08	0.33	0
4	0.91	0	IA	IA	IA	IA	0	0	0	0.19	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.09	0	0
6	0	0	IA	IA	IA	IA	0	0	0.30	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.15
9	0	0	IA	IA	IA	IA	0	0	0	0	0.02	0.5
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.28
11	0	0	IA	IA	IA	IA	0	0.13	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.96	0.30	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.07	0	0.40	0	0.01	0
15	0	0	IA	IA	IA	0	0	0	0.01	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0	0.02	0
17	0	0	IA	IA	IA	0	0	0	0	0.01	0	0
18	0	0	IA	IA	IA	0.24	0	0	0	0.09	0.01	0
19	0	0	IA	IA	IA	0.45	0	0	0	0	0	0
20	0	0.37	IA	IA	IA	0	0	0	0	0	0	0
21	0	0.21	IA	IA	IA	0.08	0	0	0	0	0.07	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0.07
23	0	IA	IA	IA	IA	0	0	0	0.41	0.10	0	0
24	0.01	IA	IA	IA	IA	0	0	0	0.02	0.01	0	0
25	0	IA	IA	IA	IA	0	0	0	0.02	0	0.02	0
26	0	IA	IA	IA	IA	0	0	0	0	0.10	0.02	0
27	0	IA	IA	IA	IA	0	0	0	0	0.16	0.01	0
28	0.17	IA	IA	IA	IA	0	0	0.03	0	0.01	0.53	0
29	0	IA	IA	IA	IA	0	0	0.43	0	0	0.08	0
30	0	IA	IA	IA		0	0	0.02	0	0	0	0
31	0		IA	IA		0		0.02		0.10	0	

*IA = Inactive gage during seasonal shutdown.

E240 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.09	0.58	IA[b]	IA	IA	1.73	0.37	0.63	1.16	0.94	1.61	1.00
Mean Total for Period of Record (in.)	1.38	0.54	IA	IA	IA	IA	0.63	1.10	0.75	2.29	1.96	2.11
Max Daily Total (in.)	0.91	0.37	IA	IA	IA	0.96	0.30	0.43	0.41	0.19	0.53	0.50
Missing Days	0	9	31	31	29	11	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E245.5 Pajarito Canyon above Three Mile Canyon

Location. Lat 35° 50’ 45.3”, Long –106° 16’ 29”, Sec. 16, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Period of Record. May 18, 2007, to September 30, 2020.

Gage. Elevation of gage is 6796 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.06 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.96 in. on October 4, 2019.

Equipment. The station is equipped with a Rain Collection II tipping bucket rain gage, which was replaced by a Campbell Scientific tipping bucket rain gage, TE525, on August 21, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 29, 2019, to March 13, 2020, when the gaging station was shut down for winter.

E245.5 Precipitation gaging station

E245.5 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.15	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.06	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0.03	0
4	0.96	0	IA	IA	IA	IA	0	0	0	0.03	0.01	0
5	0	0	IA	IA	IA	IA	0	0	0	0.26	0	0.02
6	0	0	IA	IA	IA	IA	0	0	0.25	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.32
9	0	0	IA	IA	IA	IA	0	0	0	0	0.04	0.56
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.13
11	0	0	IA	IA	IA	IA	0	0.1	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	IA	0.08	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.19	0	0.07	0.02	0	0
15	0	0	IA	IA	IA	0	0	0	0.04	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.28	0	0
17	0	0	IA	IA	IA	0.26	0	0	0	0.03	0	0
18	0	0	IA	IA	IA	0.58	0	0	0	0.32	0	0
19	0	0	IA	IA	IA	0.02	0	0	0	0	0	0
20	0	0.27	IA	IA	IA	0.02	0	0	0	0	0	0
21	0	0.4	IA	IA	IA	0	0	0	0	0	0	0
22	0	0.25	IA	IA	IA	0	0	0	0	0	0	0.01
23	0.01	0	IA	IA	IA	0	0	0	0.04	0	0	0
24	0.33	0.01	IA	IA	IA	0	0	0	0	0.1	0	0
25	0.03	0	IA	IA	IA	0	0	0.21	0	0	0	0
26	0	0	IA	IA	IA	0	0	0	0	0.09	0.1	0
27	0	0	IA	IA	IA	0	0	0	0	0.23	0	0
28	0.14	0	IA	IA	IA	0	0	0	0	0.01	0.36	0
29	0	IA	IA	IA	IA	0	0	0.05	0	0	0.22	0.02
30	0	IA	IA	IA		0	0	0.11	0	0	0	0
31	0		IA	IA		0		0.01		0	0	

*IA = Inactive gage during seasonal shutdown.

E245.5 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.47	0.93	IA[b]	IA	IA	0.88	0.27	0.48	0.40	1.37	0.97	1.06
Mean Total for Period of Record (in.)	1.22	0.63	IA	IA	IA	IA	0.66	0.80	0.62	2.46	1.84	1.81
Max Daily Total (in.)	0.96	0.40	IA	IA	IA	0.58	0.19	0.21	0.25	0.32	0.36	0.56
Missing Days	0	2	31	31	29	13	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E253 Cañon de Valle above SR 501

Location. Lat 35° 51’ 6”, Long –106° 21’ 17”, NE ¼, Sec. 25, T. 19 N., R. 5 E., Los Alamos County in Santa Fe National Forest.

Period of Record. October 10, 2007, to September, 2020.

Gage. Elevation of gage is 7719 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.59 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.16 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on March 7, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation record. The precipitation gaging station gave a complete and satisfactory record, except for November 24, 2019, to March 11, 2020, when the gaging station was shut down for winter.

E253 Precipitation gaging station

E253 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0.01	0	0.01	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.66	0
3	0	0	IA	IA	IA	IA	0	0	0	0.07	0.36	0
4	1.16	0	IA	IA	IA	IA	0	0	0	0.53	0.01	0
5	0	0	IA	IA	IA	IA	0	0	0	0.05	0	0
6	0	0	IA	IA	IA	IA	0	0	0.35	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.13
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0.58
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.28
11	0	0	IA	IA	IA	IA	0	0.04	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0	0
13	0	0	IA	IA	IA	1.07	0.32	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.11	0	0.50	0	0.07	0
15	0	0	IA	IA	IA	0	0	0	0.01	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.03	0	0
18	0	0	IA	IA	IA	0.30	0	0	0	0.45	0.01	0
19	0	0	IA	IA	IA	0.47	0	0	0	0.01	0	0
20	0	0.36	IA	IA	IA	0.01	0	0	0	0	0	0
21	0	0.16	IA	IA	IA	0.06	0	0	0	0	0.03	0.02
22	0	0.45	IA	IA	IA	0	0	0	0	0	0	0.22
23	0	0	IA	IA	IA	0	0	0	0.69	0.13	0	0
24	0.01	IA	IA	IA	IA	0	0	0	0.01	0.03	0	0
25	0	IA	IA	IA	IA	0	0	0	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.11	0	0
27	0	IA	IA	IA	IA	0	0	0	0	0.25	0	0
28	0.20	IA	IA	IA	IA	0	0	0.05	0	0	0.21	0
29	0	IA	IA	IA	IA	0	0	0.40	0	0	0.28	0
30	0	IA	IA	IA		0	0	0.01	0	0	0.01	0
31	0		IA	IA		0		0.01		0.17	0	

*IA = Inactive gage during seasonal shutdown.

E253 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.37	0.97	IA[b]	IA	IA	1.91	0.43	0.51	1.57	1.83	1.65	1.23
Mean Total for Period of Record (in.)	1.99	0.73	IA	IA	IA	IA	0.98	1.22	1.18	3.91	3.40	2.46
Max Daily Total (in.)	1.16	0.45	IA	IA	IA	1.07	0.32	0.40	0.69	0.53	0.66	0.58
Missing Days	0	7	31	31	29	11	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E257 Cañon de Valle Tributary at TA-16 Burn Grounds

Location. Lat 35° 50’ 47”, Long –106° 19’ 50”, Sec. 29, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Period of Record. April 27, 2007, to September 30, 2020.

Gage. Elevation of gage is 7360 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.63 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2018. 1.05 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on August 22, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 20, 2019, to March 13, 2020, when the gaging station was shut down for winter.

E257 Precipitation gaging station

E257 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.21	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.44	0
3	0	0	IA	IA	IA	IA	0	0	0	0.03	0.21	0
4	1.05	0	IA	IA	IA	IA	0	0	0	0.22	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.05	0	0
6	0	0	IA	IA	IA	IA	0	0	0.28	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.22
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0.70
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.12
11	0	0	IA	IA	IA	IA	0	0.03	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	IA	0.33	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.12	0	0.20	0	0.08	0
15	0	0	IA	IA	IA	0	0	0	0.04	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.03	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.17	0	0
18	0	0	IA	IA	IA	0.37	0	0	0	0.86	0.02	0
19	0	0	IA	IA	IA	0.37	0	0	0	0.01	0	0
20	0	IA	IA	IA	IA	0.01	0	0	0	0	0	0
21	0	IA	IA	IA	IA	0.03	0	0	0	0	0.02	0
22	0	IA	IA	IA	IA	0	0	0	0	0	0	0.09
23	0	IA	IA	IA	IA	0	0	0	0.41	0.06	0	0
24	0.13	IA	IA	IA	IA	0	0	0	0	0.06	0	0
25	0	IA	IA	IA	IA	0	0	0.18	0.06	0	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0.12	0	0
27	0	IA	IA	IA	IA	0	0	0	0	0.26	0.27	0
28	0.19	IA	IA	IA	IA	0	0	0.02	0	0.01	0.33	0
29	0	IA	IA	IA	IA	0	0	0.28	0	0	0.27	0
30	0	IA	IA	IA		0	0	0.1	0	0	0.01	0
31	0		IA	IA		0		0.01		0.1	0	

*IA = Inactive gage during seasonal shutdown.

E257 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.37	0	IA[b]	IA	IA	0.78	0.45	0.63	0.99	1.98	1.86	1.13
Mean Total for Period of Record (in.)	1.62	0.56	IA	IA	IA	IA	0.89	1.17	0.92	3.21	2.88	2.16
Max Daily Total (in.)	1.05	0	IA	IA	IA	0.37	0.33	0.28	0.41	0.86	0.44	0.70
Missing Days	0	11	31	31	29	13	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E262.4 PHERMEX

Location. Lat 35° 49’ 57”, Long –106° 17’ 47”, Sec. 34, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Los Alamos County.

Period of Record. August 8, 2004, to September 30, 2020.

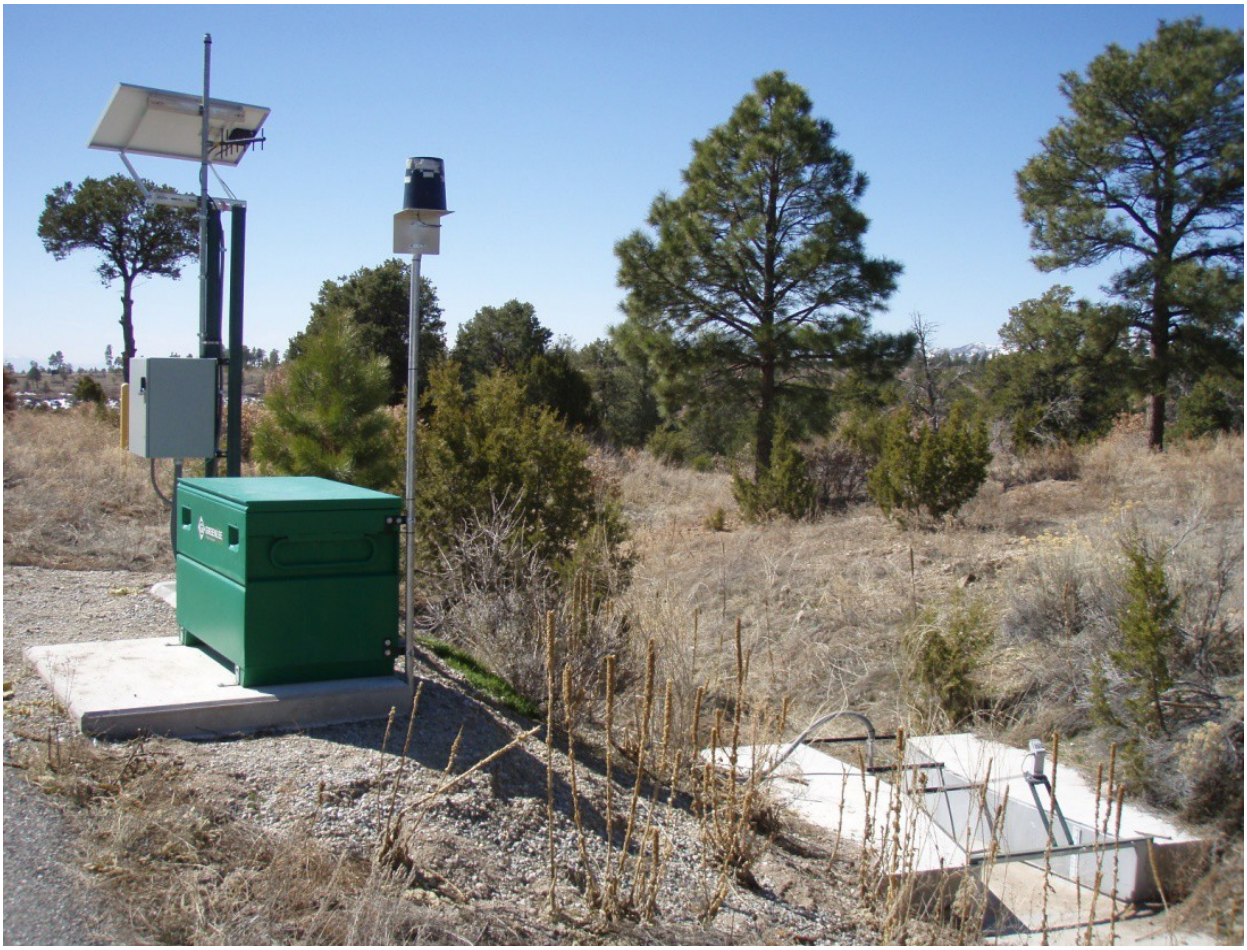
Gage. Elevation of gage is 7124 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.27 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.98 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on September 4, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 29, 2019, to March 10, 2020, when the gaging station was shut down for winter.



E262.4 Precipitation gaging station

E262.4 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.12	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.4	0
3	0	0	IA	IA	IA	IA	0	0	0	0.01	0.01	0
4	0.98	0	IA	IA	IA	IA	0	0	0	0.06	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.16	0	0
6	0	0	IA	IA	IA	IA	0	0	0.31	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.31
9	0	0	IA	IA	IA	IA	0	0	0	0	0.03	0.61
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.12
11	0	0	IA	IA	IA	0	0	0.03	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.82	0.18	0	0	0	0.01	0
14	0	0	IA	IA	IA	0	0.17	0	0.02	0	0	0
15	0	0	IA	IA	IA	0	0	0	0.03	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.24	0.02	0
17	0	0	IA	IA	IA	0	0	0	0	0.03	0	0
18	0	0	IA	IA	IA	0.54	0	0	0	0.34	0	0
19	0	0	IA	IA	IA	0.02	0	0	0	0	0	0
20	0	0.3	IA	IA	IA	0.02	0	0	0	0	0	0
21	0	0.32	IA	IA	IA	0.01	0	0	0	0	0	0
22	0	0.38	IA	IA	IA	0	0	0	0	0	0.02	0.05
23	0	0	IA	IA	IA	0	0	0	0.22	0	0	0
24	0.29	0	IA	IA	IA	0	0	0	0	0.14	0	0
25	0	0	IA	IA	IA	0	0	0.15	0	0	0	0
26	0	0	IA	IA	IA	0	0	0	0	0.12	0.13	0
27	0	0	IA	IA	IA	0	0	0	0	0.25	0.01	0
28	0.12	0	IA	IA	IA	0	0	0.01	0	0	0.31	0
29	0	IA	IA	IA	IA	0	0	0.02	0	0	0.98	0
30	0	IA	IA	IA		0	0	0.11	0	0	0.01	0
31	0		IA	IA		0		0.01		0	0	

*IA = Inactive gage during seasonal shutdown.

E262.4 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov	Dec[a]	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.39	1.00	IA[b]	IA	IA	1.41	0.35	0.33	0.58	1.35	2.05	1.09
Mean Total for Period of Record (in.)	1.49	0.58	IA	IA	IA	IA	0.81	0.99	0.77	2.86	2.01	1.95
Max Daily Total (in.)	0.98	0.38	IA	IA	IA	0.82	0.18	0.15	0.31	0.34	0.98	0.61
Missing Days	0	2	31	31	29	10	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E265 Water Canyon below SR 4

Location. Lat 35° 48’ 18”, Long –106° 14’ 31” Sec. 7, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Period of Record. May 15, 2007, to September 30, 2020.

Gage. Elevation of gage is 6311 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 3.08 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.92 in. on August 29, 2020.

Equipment. The station is equipped with a tipping bucket rain gage. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 29, 2019, to March 16, 2020, when the gaging station was shut down for winter.

E265 Precipitation gaging station

E265 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0.01	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.02	0
3	0	0	IA	IA	IA	IA	0	0	0	0.03	0.01	0
4	0.86	0	IA	IA	IA	IA	0	0	0	0	0	0
5	0	0.03	IA	IA	IA	IA	0	0	0	0.29	0.05	0
6	0	0	IA	IA	IA	IA	0	0	0.18	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.19
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0.47
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.05
11	0	0	IA	IA	IA	IA	0	0.15	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0	0	0
13	0	0	IA	IA	IA	IA	0.23	0	0	0	0	0
14	0	0	IA	IA	IA	IA	0.07	0	0	0.13	0	0
15	0	0	IA	IA	IA	IA	0	0	0.01	0	0	0
16	0	0	IA	IA	IA	IA	0	0	0	0.02	0.01	0
17	0	0	IA	IA	IA	0	0	0	0	0.03	0	0
18	0	0	IA	IA	IA	0.49	0	0	0	0.04	0	0
19	0	0	IA	IA	IA	0.04	0	0	0	0	0	0
20	0	0.23	IA	IA	IA	0.01	0	0	0	0	0	0
21	0	0	IA	IA	IA	0.02	0	0	0	0	0	0
22	0	0	IA	IA	IA	0	0	0	0	0	0	0
23	0	0	IA	IA	IA	0	0	0	0.09	0	0	0
24	0.07	0	IA	IA	IA	0	0	0	0	0.12	0	0
25	0	0	IA	IA	IA	0	0	0.12	0	0	0	0
26	0	0	IA	IA	IA	0	0	0.01	0	0.02	0	0
27	0	0	IA	IA	IA	0	0	0	0	0.34	0	0
28	0.19	0	IA	IA	IA	0	0	0	0	0.45	0.16	0
29	0	IA	IA	IA	IA	0	0	0.01	0	0	0.92	0
30	0	IA	IA	IA		0	0	0.17	0	0	0.07	0
31	0		IA	IA		0		0.01		0	0.01	

*IA = Inactive gage during seasonal shutdown.

E265 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.12	0.26	IA[b]	IA	IA	0.56	0.30	0.47	0.28	1.47	1.26	0.71
Mean Total for Period of Record (in.)	1.28	0.57	IA	IA	IA	IA	0.72	0.86	0.54	2.45	1.63	1.75
Max Daily Total (in.)	0.86	0.23	IA	IA	IA	0.49	0.23	0.17	0.18	0.45	0.92	0.47
Missing Days	0	2	31	31	29	16	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E267.4 TA-36 Minie Site

Location. Lat 35° 49’ 38”, Long –106° 16’ 36”, Sec. 35, T. 19 N., R. 6 E., Ramon Vigil Land Grant, Santa Fe National Forest.

Period of Record. July 13, 2007, to September 30, 2020.

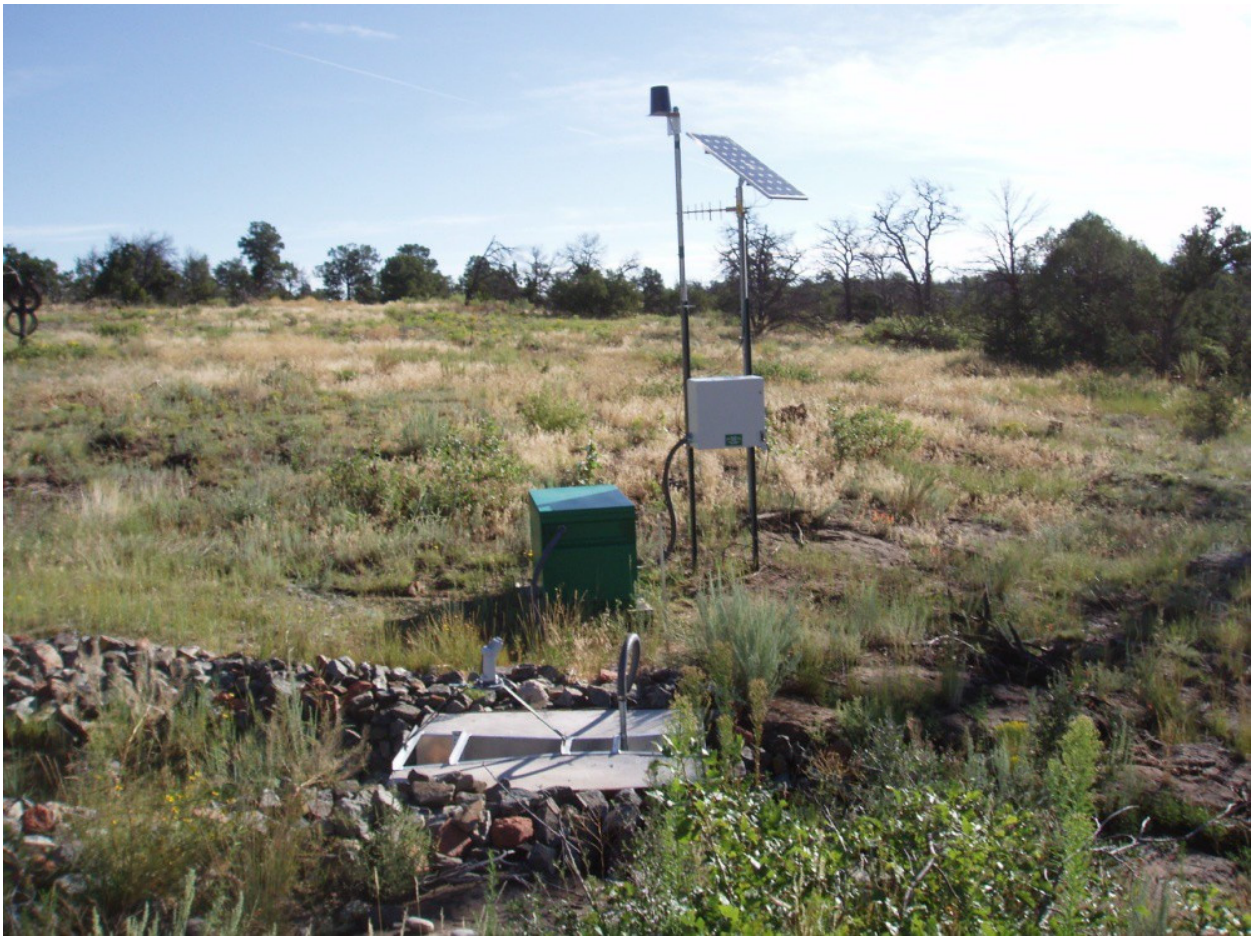
Gage. Elevation of gage is 6865 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.13 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.16 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on September 4, 2019. The equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for December 3, 2019, to March 11, 2020, when the gaging station was shut down for winter.



E267.4 Precipitation gaging station

E267.4 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	IA*	IA	IA	0	0	0	0	0.07	0
2	0	0	0	IA	IA	IA	0	0	0	0	0.06	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	1.16	0	IA	IA	IA	IA	0	0	0	0	0.01	0
5	0	0	IA	IA	IA	IA	0	0	0	0.16	0	0.02
6	0	0	IA	IA	IA	IA	0	0	0.24	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0	0	0	0.3
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0.5
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.14
11	0	0	IA	IA	IA	IA	0	0.04	0	0	0	0
12	0	0	IA	IA	IA	0	0	0	0	0	0	0
13	0	0	IA	IA	IA	0.83	0	0	0	0	0	0
14	0	0	IA	IA	IA	0	0.19	0	0	0	0	0
15	0	0	IA	IA	IA	0	0	0	0.02	0	0	0
16	0	0	IA	IA	IA	0	0	0	0	0.12	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.04	0	0
18	0	0	IA	IA	IA	0.58	0	0	0	0.23	0	0
19	0	0	IA	IA	IA	0.03	0	0	0	0.01	0	0
20	0	0.31	IA	IA	IA	0.03	0	0	0	0	0	0
21	0	0.35	IA	IA	IA	0.01	0	0	0	0	0	0
22	0	0.33	IA	IA	IA	0	0	0	0	0	0.01	0.01
23	0	0	IA	IA	IA	0	0	0	0.13	0	0	0
24	0.32	0	IA	IA	IA	0	0	0	0	0.1	0	0
25	0.02	0	IA	IA	IA	0	0	0.27	0	0.01	0	0
26	0	0	IA	IA	IA	0	0	0	0	0.05	0.06	0
27	0	0	IA	IA	IA	0	0	0	0	0.34	0	0
28	0.13	0.05	IA	IA	IA	0	0	0	0	0.01	0.23	0
29	0	0.72	IA	IA	IA	0	0	0.02	0	0	0.87	0
30	0	0	IA	IA		0	0	0.06	0	0	0.01	0
31	0		IA	IA		0		0		0	0	

*IA = Inactive gage during seasonal shutdown.

E267.4 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov	Dec[a]	Jan	Feb	Mar	Apr[a]	May	Jun	Jul	Aug	Sep
Total (in.)	1.63	1.76	IA[b]	IA	IA	1.48	0.19	0.39	0.39	1.07	1.32	0.97
Mean Total for Period of Record (in.)	1.41	0.61	IA	IA	IA	IA	0.68	0.89	0.59	2.40	1.85	1.88
Max Daily Total (in.)	1.16	0.72	IA	IA	IA	0.83	0.19	0.27	0.24	0.34	0.87	0.50
Missing Days	0	0	29	31	29	11	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

E340 Chaquehui Tributary at TA-33

Location. Lat 35° 46’ 46”, Long –106° 15’ 1”, Sec. 19, T. 18 N., R. 7 E., Ramon Vigil Land Grant, Los Alamos County.

Period of Record. May 16, 2007, to September 30, 2020.

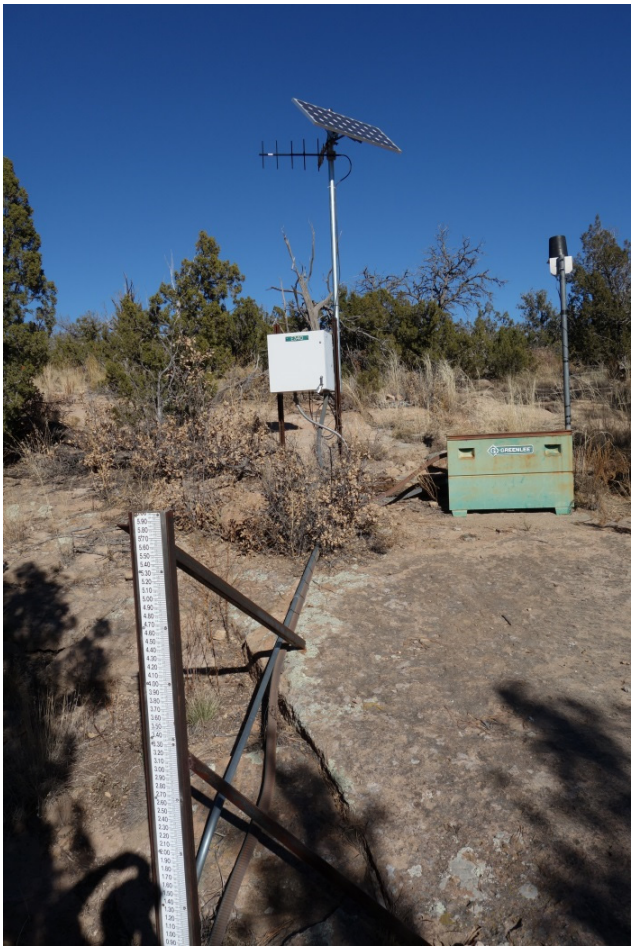
Gage. Elevation of gage is 6423 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.30 in. on July 23, 2018.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 1.01 in. on October 4, 2019.

Equipment. The station is equipped with a tipping bucket rain gage. A Rain Collection II tipping bucket rain gage was replaced with a Campbell Scientific tipping bucket rain gage, TE525, on July 25, 2019. Equipment is powered with a solar-panel battery-charging system.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record, except for November 22, 2019, to March 16, 2020, when the gaging station was shut down for winter.



E340 Precipitation gaging station

E340 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA*	IA	IA	IA	0	0	0	0	0	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0.03	0
3	0	0	IA	IA	IA	IA	0	0	0	0.01	0.01	0
4	1.01	0	IA	IA	IA	IA	0	0	0	0	0	0
5	0	0	IA	IA	IA	IA	0	0	0	0.12	0	0
6	0	0	IA	IA	IA	IA	0	0	0.18	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0	0	0	0
8	0.09	0	IA	IA	IA	IA	0	0	0	0	0	0.2
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0.48
10	0	0	IA	IA	IA	IA	0	0	0	0	0	0.05
11	0	0	IA	IA	IA	IA	0	0.02	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0	0	0.13	0	0
13	0	0	IA	IA	IA	IA	0.24	0	0	0	0	0
14	0	0	IA	IA	IA	IA	0.08	0	0	0.05	0	0
15	0	0	IA	IA	IA	IA	0	0	0.01	0	0	0
16	0	0	IA	IA	IA	IA	0	0	0.02	0	0.02	0
17	0	0	IA	IA	IA	0	0	0	0	0.04	0	0
18	0	0	IA	IA	IA	0.51	0	0	0	0.03	0	0
19	0	0	IA	IA	IA	0.02	0	0	0	0.06	0	0
20	0	0.29	IA	IA	IA	0.01	0	0	0	0	0	0
21	0	0.54	IA	IA	IA	0.02	0	0	0	0	0	0
22	0	IA	IA	IA	IA	0.01	0.05	0	0	0	0	0
23	0	IA	IA	IA	IA	0	0	0	0.05	0	0	0
24	0.08	IA	IA	IA	IA	0	0	0	0	0.12	0	0
25	0	IA	IA	IA	IA	0	0	0.11	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0.02	0	0
27	0	IA	IA	IA	IA	0	0	0	0	0.72	0	0
28	0.18	IA	IA	IA	IA	0	0	0	0	0.33	0.12	0
29	0	IA	IA	IA	IA	0	0	0	0	0	0.15	0
30	0	IA	IA	IA		0	0	0.12	0	0	0	0
31	0		IA	IA		0		0.01		0	0.01	

*IA = Inactive gage during seasonal shutdown.

E340 Monthly Total Precipitation (in.) WY 2020

	Oct	Nov[a]	Dec	Jan	Feb	Mar[a]	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.36	0.83	IA[b]	IA	IA	0.57	0.37	0.27	0.26	1.63	0.34	0.73
Mean Total for Period of Record (in.)	1.20	0.62	IA	IA	IA	IA	0.74	0.76	0.54	2.51	1.51	1.67
Max Daily Total (in.)	1.01	0.54	IA	IA	IA	0.51	0.24	0.12	0.18	0.72	0.15	0.48
Missing Days	0	9	31	31	29	16	0	0	0	0	0	0

[a] Partial month because of inactivity, maintenance, or equipment failure.

[b] IA = Inactive gage during seasonal shutdown.

Meteorological Tower Data

The meteorological network is a comprehensive system that measures temperature, wind, humidity, pressure, precipitation, insolation, and other meteorological variables required for DOE facilities. The collected data play a critical role in emergency planning in the event of chemical or radiological release, demonstrating regulatory compliance in the areas of air quality, water quality, and waste management as well as supporting monitoring programs in biology, hydrology, and health physics. Each station is named according to its location.

Precipitation gages from LANL's meteorological towers located throughout LANL collect 15-min precipitation data using heated tipping buckets. During snow precipitation events, the data are measured estimates of the amount of liquid precipitation from the total amount of snow. These data are commonly referred to as the snow-water equivalent. Monthly data are compiled from each meteorological tower to show monthly precipitation amounts. LANL meteorologists qualify the meteorological tower precipitation data. The data are either evaluated to be good or are replaced with a numerical code for missing data. Estimates are not made for missing data. Further documentation and precipitation information data can be found at https://envweb.lanl.gov/weathermachine.

Figure 10 shows the total monthly precipitation at each of the five meteorological towers.

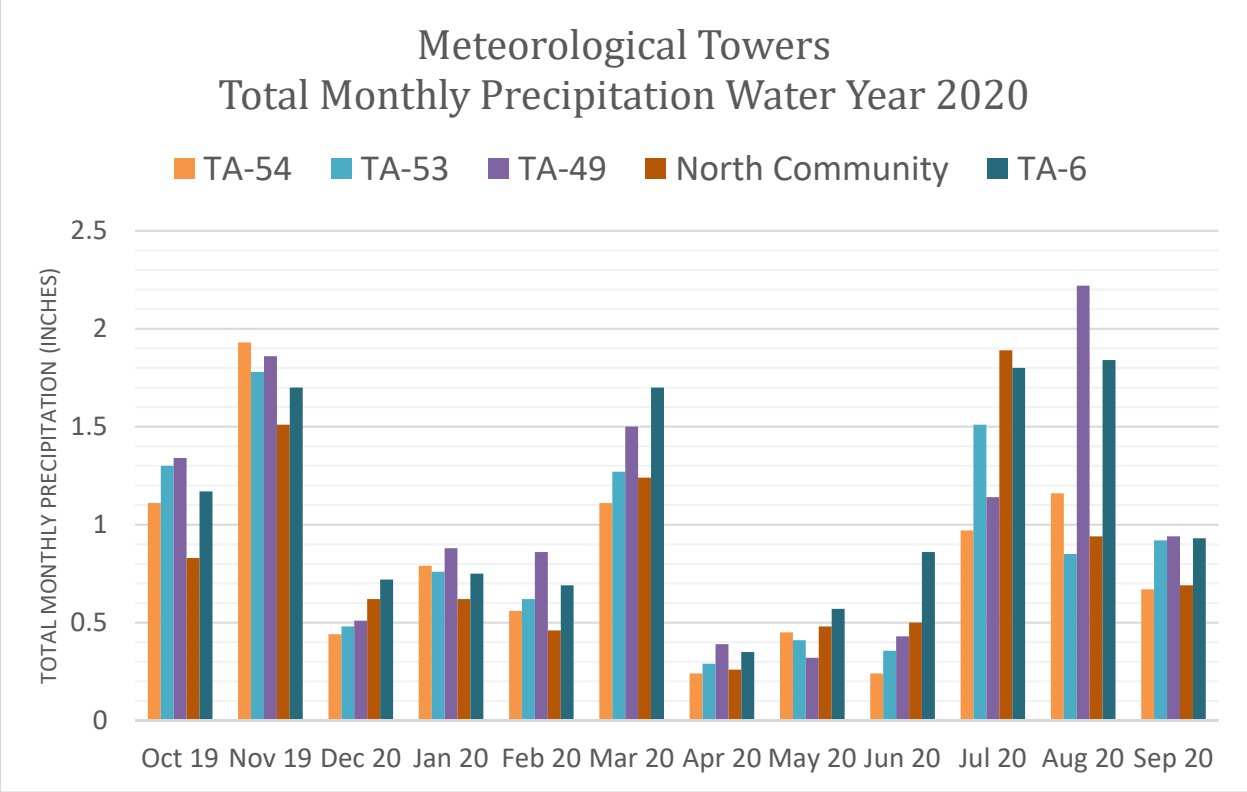


Figure 10 The total monthly precipitation for the meteorological towers for WY 2020

TA-06 Meteorological Tower

Location. Lat 35° 51’ 41”, Long –106 19’ 10.2102”, NW ¼, Sec. 21, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. February 1, 1990, to September 30, 2020.

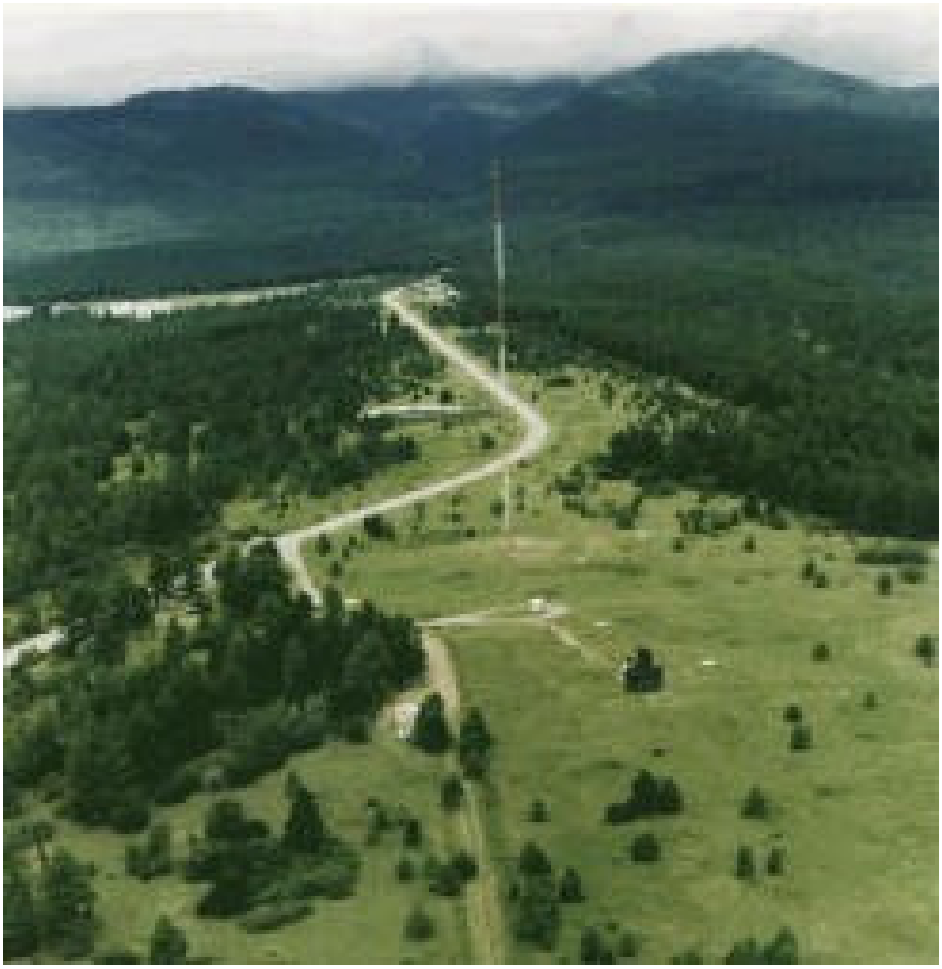
Gage. Elevation of gage is 7423 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.92 in. on September 13, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.91 in. on March 13, 2020.

Equipment. The precipitation gage consists of a heated tipping bucket with wind screen.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record for the year.



TA-06 Meteorological tower

TA-06 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0.55	0
2	0	0	0	0	0	0	0	0	0	0	0.64	0
3	0	0	0	0	0	0	0	0	0	0.03	0.19	0
4	0.87	0	0	0	0.09	0	0	0	0	0.12	0	0
5	0	0	0.03	0	0	0	0	0	0	0.10	0	0.01
6	0	0	0	0	0	0	0	0	0.24	0	0	0
7	0	0.01	0	0	0	0	0	0	0	0	0	0
8	0	0	0.21	0	0	0.03	0	0	0	0	0	0.34
9	0	0	0	0.01	0	0	0	0	0	0	0	0.50
10	0	0	0	0.02	0.14	0	0	0	0	0	0	0.07
11	0	0	0	0	0.27	0	0	0.18	0	0	0	0
12	0	0	0	0	0	0	0.02	0	0	0	0	0
13	0	0	0	0	0	0.91	0.33	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0.41	0.05	0	0
15	0	0	0.01	0	0	0	0	0	0	0	0	0
16	0	0	0	0.57	0	0	0	0	0	0.05	0.05	0
17	0	0	0	0.05	0	0	0	0	0	0.09	0	0
18	0	0	0	0	0	0.62	0	0	0	0.79	0.01	0
19	0	0	0	0	0	0.07	0	0	0	0	0	0
20	0	0.30	0	0	0	0.04	0	0	0	0	0	0
21	0	0.47	0	0.08	0	0.02	0	0	0	0	0	0
22	0	0	0	0.02	0.17	0	0	0	0	0	0	0.01
23	0	0	0	0	0.01	0	0	0	0.17	0	0	0
24	0.13	0	0.12	0	0	0	0	0	0	0.03	0	0
25	0	0	0.01	0	0.01	0	0	0.19	0.04	0.16	0	0
26	0	0.01	0	0	0	0	0	0	0	0.12	0.02	0
27	0	0.23	0.33	0	0	0	0	0	0	0.20	0	0
28	0.17	0.10	0.01	0	0	0	0	0.01	0	0.02	0.30	0
29	0	0.58	0	0	0	0	0	0.13	0	0	0.08	0
30	0	0	0	0		0.01	0	0.04	0	0	0	0
31	0		0	0		0		0.02		0.04	0	

TA-06 Monthly Total Precipitation (in.), October 2019–September 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.17	1.70	0.72	0.75	0.69	1.70	0.35	0.57	0.86	1.80	1.84	0.93
Mean Total for Period of Record (in.)	1.61	0.87	0.90	0.87	0.77	0.91	0.95	1.13	1.14	2.71	3.13	2.03
Max Daily Total (in.)	0.87	0.58	0.33	0.57	0.27	0.91	0.33	0.19	0.41	0.79	0.64	0.50
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0

TA-49 Meteorological Tower

Location. Lat 35° 48’ 48”, Long –10617’ 57.483”, T. 18 N., R. 6 E., Ramon Vigil Land Grant.

Period of Record. June 24, 1987, to September 30, 2020.

Gage. Elevation of gage is 7045 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 3.68 in. on February 27, 1988.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.99 in. on August 29, 2020.

Equipment. The precipitation gage consists of a heated tipping bucket with wind screen.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record for the year.

TA-49 Precipitation gaging station

TA-49 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0.12	0
2	0	0	0	0	0	0	0	0	0	0	0.33	0
3	0	0	0	0	0	0	0	0	0	0.01	0.06	0
4	0.98	0	0	0	0.12	0	0	0	0	0.01	0	0
5	0	0	0.02	0	0	0	0	0	0	0.20	0	0
6	0	0	0	0	0	0	0	0	0.24	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0.12	0	0	0.05	0	0	0	0	0	0.29
9	0	0	0	0.02	0	0	0	0	0	0	0.04	0.46
10	0	0	0	0.02	0.12	0	0	0	0	0	0	0.16
11	0	0	0	0	0.43	0	0	0.06	0	0	0	0
12	0	0	0	0	0	0	0.01	0	0	0	0	0
13	0	0	0	0	0	0.85	0.37	0	0	0	0.15	0
14	0	0	0	0	0	0	0.01	0	0	0.02	0	0
15	0	0.13	0	0	0	0	0	0	0.01	0	0	0
16	0	0	0	0.69	0	0	0	0	0	0.09	0.01	0
17	0	0	0	0.07	0	0	0	0	0	0.02	0	0
18	0	0	0	0	0	0.53	0	0	0	0.18	0	0
19	0	0	0	0	0	0.02	0	0	0	0.03	0	0
20	0	0.04	0	0	0	0.04	0	0	0	0	0	0
21	0	0.62	0	0.08	0	0.01	0	0	0	0	0	0
22	0	0.01	0	0	0.17	0	0	0	0	0	0.01	0.03
23	0	0	0	0	0.01	0	0	0	0.18	0	0	0
24	0.19	0	0.18	0	0	0	0	0	0	0	0	0
25	0	0	0.01	0	0.01	0	0	0.16	0	0.17	0	0
26	0	0.01	0	0	0	0	0	0	0	0.05	0.08	0
27	0	0.29	0.15	0	0	0	0	0	0	0.20	0.05	0
28	0.17	0.17	0.03	0	0	0	0	0.01	0	0.15	0.38	0
29	0	0.59	0	0	0	0	0	0.02	0	0	0.99	0
30	0	0	0	0		0	0	0.06	0	0	0	0
31	0		0	0		0		0.01		0.01	0	

TA-49 Monthly Total Precipitation (in.), October 2019–September 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.34	1.86	0.51	0.88	0.86	1.50	0.39	0.32	0.43	1.14	2.22	0.94
Mean Total for Period of Record (in.)	1.55	0.90	0.83	0.90	0.73	0.88	0.87	1.02	0.91	2.28	2.78	1.87
Max Daily Total (in.)	0.98	0.62	0.18	0.69	0.43	0.85	0.37	0.16	0.24	0.20	0.99	0.46
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0

TA-53 Meteorological Tower

Location. Lat 35° 52’ 12”, Long –106° 15’ 15”, NW ¼, Sec. 24, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. February 8, 1992, to September 30, 2020.

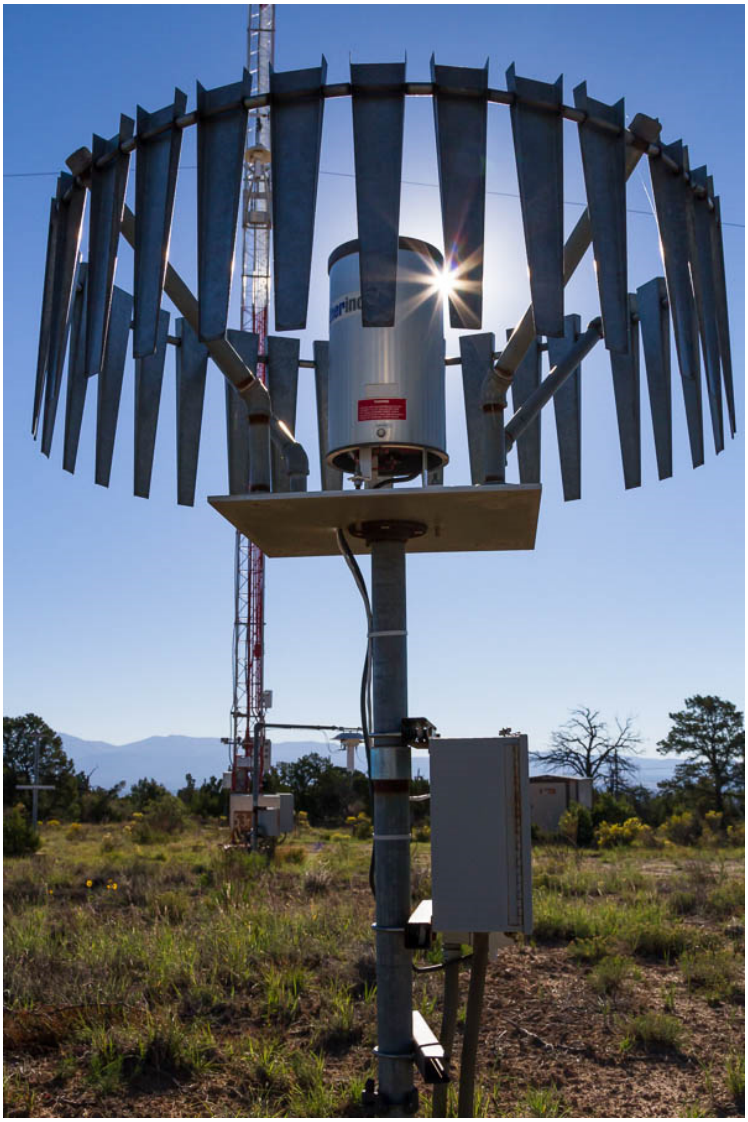
Gage. Elevation of gage is 6992 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.01 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.92 in. on October 4, 2019.

Equipment. The precipitation gage consists of a heated tipping bucket with wind screen.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record for the year.



TA-53 Precipitation gaging station (foreground) and meteorological tower (background)

TA-53 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0.21	0
2	0	0	0	0.02	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0.01	0
4	0.92	0	0	0	0.05	0	0	0	0	0.01	0	0
5	0	0	0.03	0	0	0	0	0	0	0.28	0	0.03
6	0	0	0	0	0	0	0	0	0.22	0	0	0
7	0	0.01	0	0	0	0	0	0	0	0	0	0
8	0	0	0.17	0	0	0.05	0	0	0	0	0	0.33
9	0	0	0.01	0.01	0	0	0	0	0	0	0.1	0.45
10	0	0	0	0.02	0.13	0	0	0	0	0	0	0.11
11	0	0	0	0	0.3	0	0	0.01	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0.15	0	0	0	0.67	0.29	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0.09	0.05	0	0
15	0	0	0	0	0	0	0	0	0.04	0	0	0
16	0	0	0	0.63	0	0	0	0	0	0.16	0	0
17	0	0	0	0.04	0	0	0	0	0	0.04	0	0
18	0	0	0	0	0	0.49	0	0	0	0.22	0	0
19	0	0	0	0	0	0.04	0	0	0	0	0	0
20	0	0.06	0	0	0	0.01	0	0	0	0	0	0
21	0	0.61	0	0.04	0	0.01	0	0	0	0	0	0
22	0	0	0	0	0.13	0	0	0	0	0	0	0
23	0	0	0	0	0.01	0	0	0	0.01	0	0	0
24	0.24	0	0.10	0	0	0	0	0	0	0.01	0	0
25	0	0	0	0	0	0	0	0.17	0	0.07	0	0
26	0	0	0	0	0	0	0	0	0	0.09	0	0
27	0	0.27	0.17	0	0	0	0	0	0	0.55	0	0
28	0.14	0.08	0	0	0	0	0	0.01	0	0.03	0.48	0
29	0	0.60	0	0	0	0	0	0.02	0	0	0.05	0
30	0	0	0	0		0	0	0.20	0	0	0	0
31	0		0	0		0		0		0	0	

TA-53 Monthly Total Precipitation (in.), October 2019–September 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.30	1.78	0.48	0.76	0.62	1.27	0.29	0.41	0.36	1.51	0.85	0.92
Mean Total for Period of Record (in.)	1.36	0.71	0.69	0.74	0.65	0.77	0.81	1.01	0.86	1.94	2.35	1.55
Max Daily Total (in.)	0.92	0.61	0.17	0.63	0.30	0.67	0.29	0.20	0.22	0.55	0.48	0.45
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0

TA-54 White Rock Meteorological Tower

Location. Lat 35° 49’ 33”, Long –106° 13’ 24”, T. 18 N., R. 7 E., Ramon Vigil Land Grant.

Period of Record. January 29, 1992, to September 30, 2020.

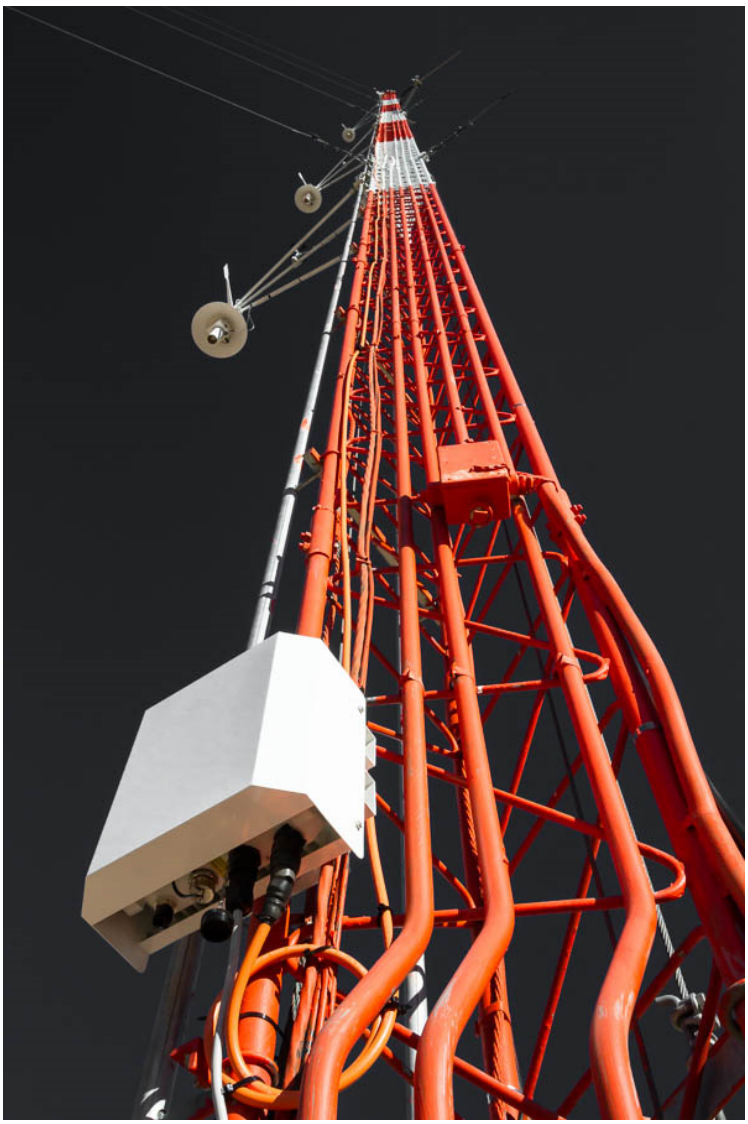
Gage. Elevation of gage is 6553 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 3.28 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.91 in. on August 29, 2020.

Equipment. The precipitation gage consists of a heated tipping bucket with wind screen.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record for the year.



TA-54 Meteorological tower

TA-54 Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0.02	0.01
2	0	0	0	0.03	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0.03	0.04	0
4	0.82	0	0	0	0.06	0	0	0	0	0	0	0
5	0	0	0.02	0	0	0	0	0	0	0.14	0	0
6	0	0	0	0	0	0	0	0	0.18	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0.11	0	0	0.04	0	0	0	0	0	0.22
9	0	0	0	0	0	0	0	0	0	0	0	0.40
10	0	0	0	0.01	0.11	0	0	0	0	0	0	0.04
11	0	0	0	0	0.29	0	0	0.14	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0.62	0.24	0	0	0	0.01	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0.01	0	0	0
16	0	0	0	0.64	0	0	0	0	0	0.06	0	0
17	0	0	0	0.06	0	0	0	0	0	0.01	0	0
18	0	0	0	0	0	0.37	0	0	0	0.20	0	0
19	0	0	0	0	0	0.05	0	0	0	0	0	0
20	0	0.24	0	0	0	0.02	0	0	0	0	0	0
21	0	0.52	0	0.04	0	0.01	0	0	0	0.05	0	0
22	0	0.06	0	0.01	0.09	0	0	0	0	0	0	0
23	0	0	0	0	0.01	0	0	0	0.05	0	0	0
24	0.14	0	0.14	0	0	0	0	0	0	0	0.01	0
25	0	0	0.01	0	0	0	0	0.13	0	0.08	0	0
26	0	0.01	0	0	0	0	0	0	0	0.02	0	0
27	0	0.32	0.15	0	0	0	0	0	0	0.17	0	0
28	0.15	0.15	0	0	0	0	0	0	0	0.20	0.15	0
29	0	0.63	0.01	0	0	0	0	0	0	0	0.91	0
30	0	0	0	0		0	0	0.18	0	0	0.02	0
31	0		0	0		0		0		0.01	0	

TA-54 Monthly Total Precipitation (in.), October 2019–September 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	1.11	1.93	0.44	0.79	0.56	1.11	0.24	0.45	0.24	0.97	1.16	0.67
Mean Total for Period of Record (in.)	1.10	1.91	0.45	0.78	0.56	1.12	0.24	0.45	0.25	1.01	1.15	0.67
Max Daily Total (in.)	0.82	0.63	0.15	0.64	0.29	0.62	0.24	0.18	0.18	0.20	0.91	0.40
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0

North Community Meteorological Tower

Location. Lat 35° 54’ 3”, Long –106° 19’ 18”, NE ¼, Sec. 5, T. 19 N., R. 6 E., Los Alamos County.

Period of Record. January 1, 1986, to September 30, 2020.

Gage. Elevation of gage is 7414 ft using LANL LIDAR DEM with NAD 83.

Maximum Daily Total Precipitation for Period of Record. 2.58 in. on September 12, 2013.

Maximum Daily Total Precipitation for Monsoon Season WY 2020. 0.69 in. on October 4, 2019.

Equipment. The precipitation gage consists of a heated tipping bucket with wind screen.

Precipitation Record. The precipitation gaging station gave a complete and satisfactory record for the year.

No image available for the North Community precipitation gaging station.

North Community Daily Total Precipitation (in.) WY 2020

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0.04	0
2	0	0	0	0	0	0	0	0	0	0	0.10	0
3	0	0	0	0	0	0	0	0	0	0.06	0.09	0
4	0.69	0	0	0	0	0	0	0	0	0.08	0	0
5	0	0	0.04	0	0	0	0	0	0	0.29	0.02	0.03
6	0	0	0	0	0.01	0	0	0	0.21	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0.01	0
8	0	0	0.22	0	0	0.04	0	0	0	0	0	0.24
9	0	0	0	0	0	0	0	0	0	0	0.21	0.37
10	0	0	0	0.01	0.03	0	0	0	0	0	0	0.03
11	0	0	0	0	0.25	0.02	0	0.06	0	0	0	0
12	0	0	0	0	0.02	0	0	0	0	0.06	0	0
13	0	0	0	0	0	0.66	0.24	0	0	0	0	0
14	0	0	0.01	0	0	0	0.02	0	0.14	0.10	0	0
15	0	0	0.01	0	0	0	0	0	0	0.05	0	0
16	0	0	0	0.30	0	0	0	0	0	0	0.02	0
17	0	0	0	0.22	0	0	0	0	0	0.33	0	0
18	0	0	0	0.02	0	0.32	0	0	0	0.19	0	0
19	0	0	0	0.01	0	0.16	0	0	0	0	0	0
20	0	0.25	0	0	0	0.04	0	0	0	0	0	0
21	0	0.36	0	0.05	0	0	0	0	0	0.02	0	0
22	0	0.03	0	0.01	0.13	0	0	0	0	0	0	0.02
23	0	0	0	0	0.02	0	0	0	0.05	0	0	0
24	0	0	0.08	0	0	0	0	0	0.01	0.06	0	0
25	0	0	0	0	0	0	0	0.05	0.09	0.08	0	0
26	0	0	0	0	0	0	0	0	0	0.09	0.06	0
27	0	0.01	0.25	0	0	0	0	0	0	0.32	0	0
28	0.14	0.26	0.01	0	0	0	0	0.01	0	0.16	0.27	0
29	0	0.60	0	0	0	0	0	0.26	0	0	0.12	0
30	0	0	0	0		0	0	0.04	0	0	0	0
31	0		0	0		0		0.06		0	0	

North Community Monthly Total Precipitation (in.), October 2019–September 2020

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total (in.)	0.83	1.51	0.62	0.62	0.46	1.24	0.26	0.48	0.50	1.89	0.94	0.69
Mean Total for Period of Record (in.)	1.64	0.82	0.81	0.82	0.74	0.88	0.99	1.11	1.16	2.70	3.23	1.73
Max Daily Total (in.)	0.69	0.60	0.25	0.30	0.25	0.66	0.24	0.26	0.21	0.33	0.27	0.37
Missing Days	0	0	0	0	0	0	0	0	0	0	0	0

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Previous LANL reports in this series: "Surface Water Data at Los Alamos National Laboratory" for WY 1995 to 2019 are available in pdf format. The reports can be accessed at the electronic public reading room at http://eprr.lanl.gov.

ABBREVIATIONS, ACRONYMS, AND GLOSSARY

Acre-foot (acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, 325,851 gallons, or 1233.49 cubic meters.

CMP is corrugated metal pipe.

Consent Order is the Compliance Order on Consent

Construction General Permit is a permit from the U.S. Environmental Protection Agency that allows for storm water discharges from construction activities.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross-section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal used to regulate the flow or stage of the stream.

Cubic feet per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second; it is equivalent to 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

DOE is the U.S. Department of Energy.

Discharge is the volume of water (or more broadly, the volume of fluid, including suspended sediment) that passes a given point within a given period of time.

Drainage area of a stream at a specified location is that area measured in a horizontal plane and enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage areas provided herein include all closed basins, or noncontributing areas, within the area, unless otherwise noted.

EPA (U.S. Environmental Protection Agency) is the federal agency that enforces regulations to protect the environment and human health.

Extended precipitation network is the LANL precipitation monitoring gage network from which precipitation data are obtained.

Gage height is the water-surface elevation referred to in some arbitrary gage data. GH is often used interchangeably with the more general term “stage,” although GH is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir in which systematic observations of hydrologic data are obtained.

GPS is global positioning system.

Individual Permit is a National Pollutant Discharge Elimination System individual permit issued by the EPA that authorizes the discharge of storm water associated with industrial activities at Los Alamos National Laboratory.

Instantaneous discharge is the discharge at a particular instance of time.

ISCO is a reference to Teledyne ISCO, Inc., which is an automated sampler manufacturer.

LANL is Los Alamos National Laboratory.

LIDAR DEM is light detection and ranging digital elevation model.

MDA is material disposal area.

Mean discharge (mean) is the arithmetic mean of individual daily mean discharges during a specific period.

Meteorological observation network is a network of towers that provides year-round meteorological data.

Multi-Sector General Permit is a National Pollutant Discharge Elimination System permit issued by the EPA that authorizes the discharge of storm water associated with industrial activities.

N3B is Newport News Nuclear BWXT-Los Alamos, LLC

National Geodetic Vertical Datum of 1929 (NGVD 29) is the National standard reference datum for elevations.

NEMA is the National Electrical Manufacturers Association.

North American Datum of 1983 (NAD 83) is the official horizontal datum for use in the North and Central American geodetic networks. Based on the Geodetic Reference System 1980 ellipsoid, it was developed using satellite and remote sensing imagery and is the default datum used at LANL and most global positioning system units today.

NPDES is National Pollutant Discharge Elimination System.

Point of zero flow (PZF) is the gage height at which no flow occurs.

Reference point is a permanent gage height reference used to calibrate stage measurements.

Site Discharge Pollution Prevention Plan is a LANL report updated annually that provides information on each of the seven major watersheds of the Pajarito Plateau and related storm water monitoring activities within the watersheds.

SR means “State Road” and is the former designation for NM 4, NM 501, and NM 502. It appears in gaging station names.

Stage see **gage height**.

Stage-discharge relationship is the relation between the water-surface elevation, termed “gage height,” and the volume of water flowing in a channel per unit of time.

Stream flow is the discharge that occurs in a natural channel.

TA is technical area.

USGS is U.S. Geological Survey.

Waste Water Treatment Facility (WWTF) is the Los Alamos County Wastewater Treatment Facility located in TA-74 in Pueblo Canyon. It was previously called the Waste Water Treatment Plant.

Water data report is the USGS report that provides the methodology used for data collection.

Water year (WY) in reports dealing with surface water supply is the 12-mo period, October 1 through September 30. The water year is designated by the calendar year in which it ends and that includes 9 of the 12 mo. Thus, the year ending September 30, 1980, is called the “1980 water year” or WY 1980.