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# Surface Water Data at Los Alamos National Laboratory, Water Year 2014

Prepared by the Associate Directorate for Environmental Management

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## INTRODUCTION

The annual water data report from Los Alamos National Laboratory (LANL) contains flow data from 34 stream gage stations and precipitation data from the extended network, meteorological observation stations, and precipitation emergency notification stations that cover most of LANL's property (see Figure 1). Data are collected from LANL's upper boundary, approximated by NM 501, to the lower boundary, approximated by NM 4. Gage station data are used to support the monitoring of Los Alamos/Pueblo Canyons under the March 2005 Compliance Order on Consent, the Buckman Direct Diversion Emergency Notification System, monitoring of Sandia Canyon for wetland stabilization, LANL's Environmental Surveillance Program, and activities directed by the Water Canyon/Cañon de Valle investigation report. Precipitation gage station data support all the programs that the stream discharge gage stations support as well as the Multi-Sector General Permit.

Los Alamos, New Mexico, has a semiarid climate with an average rainfall of about 19 in. per year. Over 30% of the area is dominated by ponderosa pine stands 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 gage 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 facility mostly because of losses in stream channel transmission. The remainder of the stream gage stations are located in either intermittent or perennial streams.

### Qualifiers

Raw data are qualified using a standard set of numbers 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 was present.
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.
Silting and scouring	SS	A datum shift was applied because of silting or scouring.
Datum shift	DS	A datum shift was applied to the data.
Inactive	IA	The gage was inactive because of an event that damaged the station beyond immediate repair.
Snow	S	Precipitation as snow.

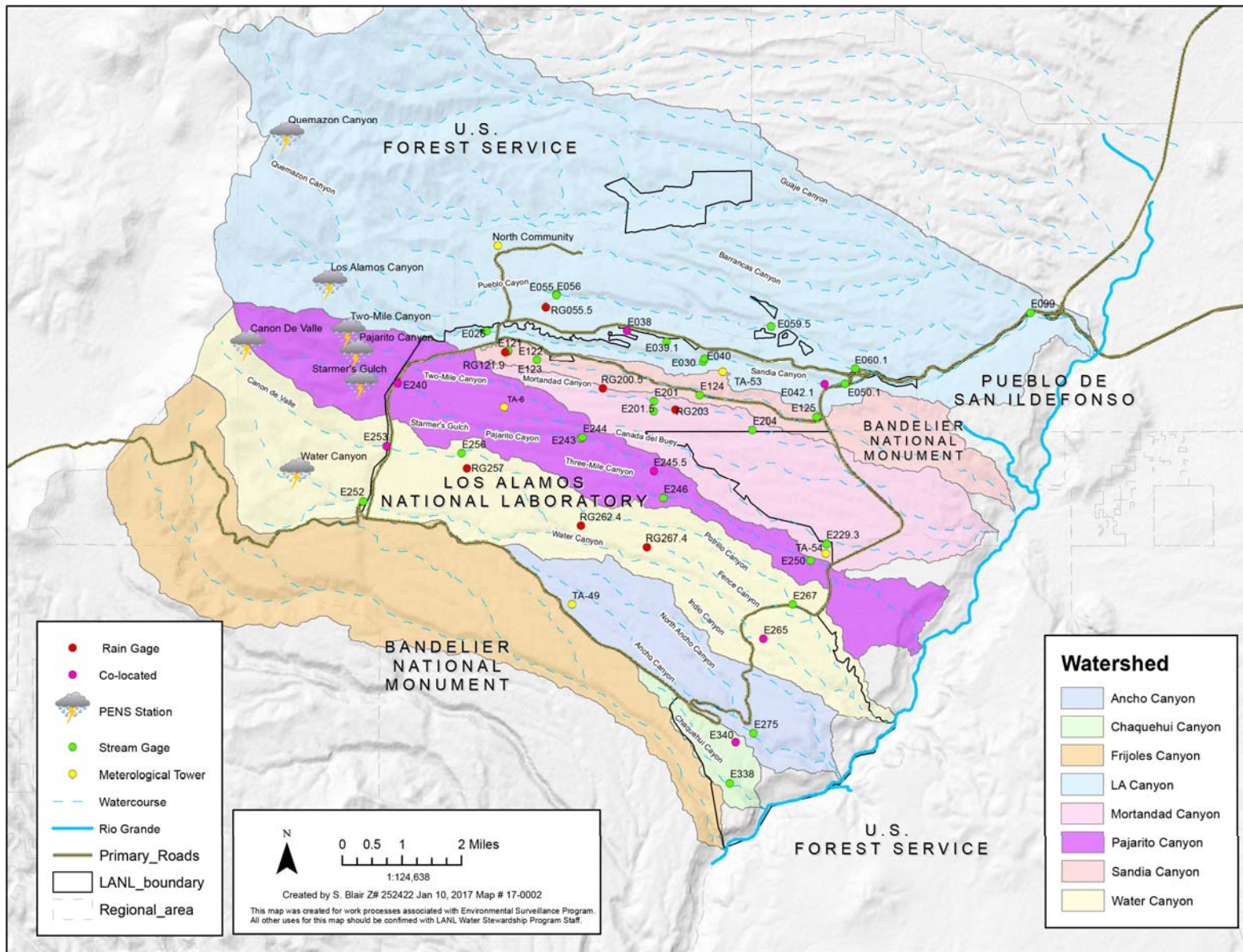


Figure 1 Location of watersheds, canyons, streams, stream gages, and rain gages on LANL property



## **STREAM DISCHARGE GAGE STATIONS**

### **Station Identification Numbers**

The U.S. Geological Survey (USGS), Water Resources Division, assigns a unique identification number to each stream gage station it establishes. All sites numbered since 1950 are part of the downstream order system. In this report, the station numbers increase from upstream to downstream.

This report adheres to the USGS convention of 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.

### **Data Collection and Computation**

A complete record at a gage 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. Discharge is measured using meters and methods adopted by the USGS. The methods can be found in the USGS Technique of Water Resources Investigations, Book 3 (Carter and Davidian 1968), Chapter A6; and the USGS Water Supply Paper 2175 (Rantz 1982).

Rating curves were developed using the stage-discharge relationship curve determined from measured stage and the corresponding discharge. 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 gage 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 gage 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 gage 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 <sup>3</sup> /s) is	Then it is reported as
less than 1 ft <sup>3</sup> /s	nearest hundredth
1–10 ft <sup>3</sup> /s	nearest tenth
10–1000 ft <sup>3</sup> /s	whole number
above 1000 ft <sup>3</sup> /s	three significant figures

## Data Presentation

The records published in this report consist of three parts for each stream discharge gage station:

- Station analysis summary
- Station manuscript description with photo
- Data table for the water year (October 1, 2013, to September 30, 2014)

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.

**Fieldwork:** The fieldwork completed for each stream gage is shown in a table. Inspection site visits and maintenance site visits are tabulated for the stream gage and for the ISCO samplers present at the site.

**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 gage 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 the 2012 water year (WY2012).

**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 WY2010 should be considered estimated because of differences in the current validation and verification methodology.

**Maximum Discharge for Current Water Year:** Maximums given are similar to those for the period of record. The time for occurrence of peaks is expressed in 24-h 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 gage 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 WY2014

Canyon Sites	Estimated Days with Flow	Total Volume (acre-ft)	Instantaneous Maximum Discharge (ft <sup>3</sup> /s)
E026 Los Alamos Canyon below Ice Rink <sup>a</sup>	35 <sup>a</sup>	7.3 <sup>a</sup>	54 <sup>a</sup>
E030 Los Alamos Canyon above DP Canyon	25	29	292
E038 DP Canyon above TA-21	52	46	270
E039.1 DP Canyon below Grade Control Structure	240	117	317
E040 DP Canyon above Los Alamos Canyon <sup>a</sup>	28 <sup>a</sup>	52.7 <sup>a</sup>	268 <sup>a</sup>
E042.1 Los Alamos above Low Head Weir <sup>a</sup>	23 <sup>a</sup>	91.9 <sup>a</sup>	210 <sup>a</sup>
E050.1 Los Alamos Canyon below Low Head Weir	32	67	214
E055 Pueblo Canyon above Acid Canyon	37	16.7	71
E055.5 South Fork of Acid Canyon	33	1.6	16
E056 Acid Canyon above Pueblo Canyon	101	11.7	45
E059.5 Pueblo Canyon below WWTF <sup>a</sup>	98 <sup>a</sup>	52 <sup>a</sup>	97 <sup>a</sup>
E060.1 Pueblo Canyon below Grade Control Structure	23	27	54
E121 Sandia Canyon Right Fork at Power Plant	364	191	66
E122 Sandia Canyon Left Fork at Asphalt Plant	365	53.8	19
E123 Sandia Canyon below Wetlands	331	702	109
E124 Sandia above Firing Range <sup>a</sup>	2 <sup>a</sup>	1.1 <sup>a</sup>	50 <sup>a</sup>
E125 Sandia Canyon above SR 4	22	4.5	58
E201 Mortandad Canyon above Ten Site Canyon	8	9.43	93
E201.5 Ten Site Canyon above Mortandad Canyon	7	19.1	105
E204 Mortandad Canyon at LANL Boundary	10	0.40	6.5
E229.3 Cañada del Buey at SR-4	11	0.71	11
E240 Pajarito Canyon below SR 501	10	6.5	141
E245.5 Pajarito Canyon above Three Mile Canyon	26	250	424
E246 Three Mile Canyon above Pajarito Canyon <sup>a</sup>	3 <sup>a</sup>	0.87 <sup>a</sup>	5.4 <sup>a</sup>
E250 Pajarito Canyon above SR 4	n/a <sup>b</sup>	n/a	n/a
E252 Water Canyon above SR 501 <sup>a</sup>	21 <sup>a</sup>	7.97 <sup>a</sup>	21 <sup>a</sup>
E253 Cañon de Valle above SR 501 <sup>a</sup>	0 <sup>a</sup>	0 <sup>a</sup>	0 <sup>a</sup>
E256 Cañon de Valle below MDA-P <sup>a</sup>	6 <sup>a</sup>	0.01 <sup>a</sup>	0.06 <sup>a</sup>
E265 Water Canyon below SR 4	4	10.4	52
E267 Potrillo Canyon above SR 4 <sup>a</sup>	3 <sup>a</sup>	1.4 <sup>a</sup>	25 <sup>a</sup>
E275 Ancho Canyon below SR 4	6	4	74
E338 Chaquehui at TA-33	7	8.2	179
E340 Chaquehui Tributary at TA-33	1	0.06	4.2

<sup>a</sup> This gage was in operation for only part of the water year.

<sup>b</sup> n/a = Not applicable. Gage not in operation for water year.

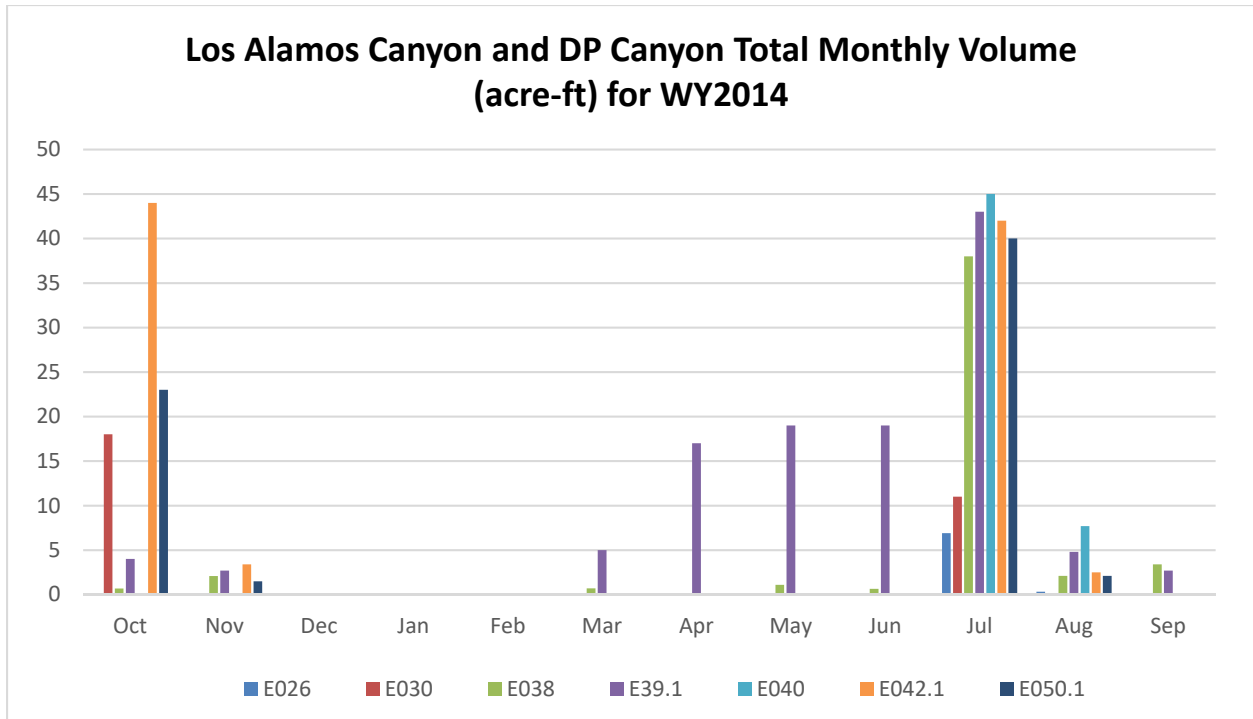
## Los Alamos/Pueblo Watershed

The Los Alamos Canyon/Pueblo Canyon watershed is located at the northern end of Los Alamos County and LANL. The watershed heads 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<sup>2</sup>. The watershed includes Los Alamos, Pueblo, and DP Canyons. Bayo, Guaje, Rendija, and Barrancas 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 San Ildefonso Pueblo tribal lands are located within the Los Alamos/Pueblo watershed.

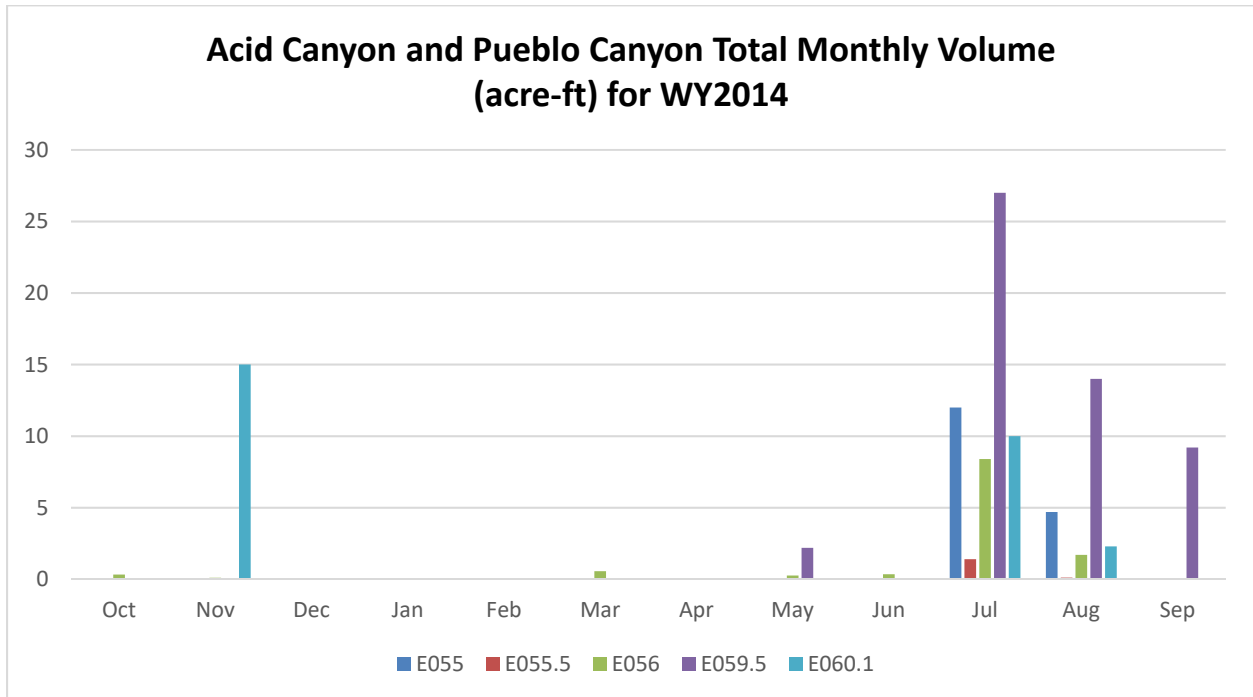
Pueblo Canyon is located on the north side of the Los Alamos townsite and extends from the Jemez Mountains to its confluence with Los Alamos Canyon, approximately 4.5 mi east of the Los Alamos townsite at the intersection of NM 502 and NM 4. Los Alamos Canyon is the southernmost canyon in the watershed. 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 Canyon 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 gage discharge stations within Acid and Pueblo Canyons, located within the Los Alamos/Pueblo watershed. Station E055 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. The remainder of the sites within Acid Canyon did not have any discharge. Gage 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 WY2014 for Los Alamos Canyon and DP Canyon



**Figure 3** The total monthly volume (acre-ft) for WY2014 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<sup>2</sup>.

**Period of Record.** February 26, 2001, to September 30, 2014.

**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.** 3 yr, 139 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 54 ft<sup>3</sup>/s, July 31, 2014, gage height 1.51 ft.



**E026 Stream gage 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 National Electrical Manufacturers Association (NEMA) shelter on top of a 24-in. corrugated metal pipe (CMP) well. The station is equipped with two ISCO samplers (one 12-count 1-L glass and 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 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 measurement above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
30	5	19	1	1	1

**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 October 1, 2013, through January 23, 2014, and August 7, 2014, because of equipment failure.

**Rating.** The channel at the gage 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 gage. The channel is the control for medium and high stages. The buildup and scour of this control lead to shift changes during the water year.

Rating No. 3 was developed based on measurements made during the period of record.

Flow is partially regulated by the Los Alamos Reservoir about 1.5 mi upstream of the gage and the draining of this reservoir. The gage of reference at this station is the inside reference point (the RP measure). At low and medium flows, the staff plate stage reading will be lower than the stilling well stage reading.

One discharge measurement was made during the year.

**Discharge.** Discharges were computed from Rating No. 3.



**E026 Daily Peak Discharge (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	E*	E	E	E	0	0	0	0	0	0	0.28	0
2	E	E	E	E	0	0	0	0	0	0	0.06	0
3	E	E	E	E	0	0	0	0	0	0	0.05	0.01
4	E	E	E	E	0	0	0	0	0	0	2.6	0
5	E	E	E	E	0	0	0	0	0	0	0.06	0
6	E	E	E	E	0	0	0	0	0	0	0	0
7	E	E	E	E	0	0	0	0	0	14	E	0
8	E	E	E	E	0	0	0	0	0	1.4	5.0	0.01
9	E	E	E	E	0	0	0	0	0	0	0	0
10	E	E	E	E	0	0	0	0	0	0	0	0
11	E	E	E	E	0	0	0	0	0	0	0	0
12	E	E	E	E	0	0	0	0.28	0	0	0	0
13	E	E	E	E	0	0	0	0.07	0	0	0	0
14	E	E	E	E	0	0	0	0.48	0	0	0.07	0
15	E	E	E	E	0	0	0	0.16	0	0	0.07	0
16	E	E	E	E	0	0	0.22	0.28	0	0	0.09	0
17	E	E	E	E	0	0	0	0	0	0	0	0
18	E	E	E	E	0	0	0	0	0	0	0	0
19	E	E	E	E	0	0	0	0	0	0.41	0	0
20	E	E	E	E	0	0	0	0	0	0.02	0	0
21	E	E	E	E	0	0	0	0	0	0	0	0
22	E	E	E	E	0	0	0	0	0	0	0	0
23	E	E	E	E	0	0	0	0	0	0.04	0	0
24	E	E	E	0	0	0	0	0.01	0	0	0	0
25	E	E	E	0	0	0	0	6.4	0	0	0.01	0
26	E	E	E	0	0	0	0	0	0	0	0.01	0
27	E	E	E	0	0	0	0	0	0	0.84	0	0
28	E	E	E	0	0	0	0.05	0	0	0	0	0
29	E	E	E	0		0	0.05	0	0	17	0	0
30	E	E	E	0		0	0	0	0	0.84	0.01	0.01
31	E		E	0		0		0		54	0.01	

\* E represents equipment failure.

**E026 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	E	E	0	0		0.01	0.07	0	6.9	0.33	0	7.3
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	E	E	E	0	0	0	0.22	6.4	0	54	5.0	0.01	54
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	E	E	E	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	30	31	23	0	0	0	0	0	0	1	0	116

\* E represents equipment failure.

**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<sup>2</sup>.

**Period of Record.** July 1994 to September 30, 2014.

**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.** 3 yr, 65 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 54 ft<sup>3</sup>/s, July 31, 2014, gage height 1.5 ft.



**E030 Stream gage 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 on the left bank. The station is equipped with an ISCO pump sampler (12-count 1-L glass 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.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
27	5	22	1	n/a*	n/a

\* n/a = Not applicable.

**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.

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

Rating No. 3 was used for the entire water year.

No discharge measurements were made during the year.

**Discharge.** Discharge was computed using Rating No. 3.

**E030 Daily Peak Discharge (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.06	0	0	0	0	0	0	0	0	0	0	0
2	4.6	0	0	0	0	0	0	0	0	0	0	0
3	4.6	0	0	0	0	0	0	0	0	0	0	0
4	1.6	0.95	0	0	0	0	0	0	0	0	0.64	0
5	0	0.06	0	0	0	0	0	0	0	0	0	0
6	0	0.03	0	0	0	0	0	0	0	0	0	0
7	0	0.10	0	0	0	0	0	0	0	1.2	0	0
8	0	0	0	0	0	0	0	0	0	3.2	0	0
9	0	0	0	0	0	0	0	0	0	0.01	0	0
10	2.4	0	0	0	0	0	0	0	0	0.01	0	0
11	1.3	0	0	0	0	0	0	0	0	0.01	0	0
12	1.2	0	0	0	0	0	0	0	0	0.01	0	0
13	0	0	0	0	0	0	0	0	0	0.01	0	0
14	0	0	0	0	0	0	0	0	0	0.01	0	0
15	0	0	0	0	0	0	0	0	0	2.9	0	0
16	0.01	0	0	0	0	0	0	0	0	0.01	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	23	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		292	0	

**E030 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	18	0.12	0	0	0	0	0	0	0	11	0.16	0	29
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	4.6	0.95	0	0	0	0	0	0	0	292	0.64	0	292
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

**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<sup>2</sup>.

**Period of Record.** April 26, 2000, to September 30, 2014.

**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.** 3 yr, 43 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 292 ft<sup>3</sup>/s, July 31, 2014, gage height 3.6 ft.



**E038 Stream gage upstream view**

**Equipment.** The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS 4710 radio transceiver, and a Sutron Accububble self-contained bubbler system. 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 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, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
26	9	20	1	20	1

**Datum Correction.** Levels run in July 2005 show the gage to be within limits.

**Gage-Height Record.** The data logger referenced to the outside gage gave a complete and satisfactory record for the year, except for November 6, 7, 26, and 27, 2013, because of equipment malfunction and December 1, 2, and 5–13, 2013; January 30, and 31, 2014; February 1, 2, 4, 12–25, and 27, 2014; and March 19, 2014, because of ice.

**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 gage about 5 ft away. The channel is the control for medium and high stages.

Rating No. 3 was developed using past discharge measurements and verified with current measurements.

No discharge measurements were made during the year.

**Discharge.** Discharge was computed using Rating No. 3.

E038 Daily Peak Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I <sup>a</sup>	0	I	3.2	0	0.28	0	0	25.8	0
2	0	0	I	0	I	0.31	0	0	0	0.24	0.04	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	17	0	0	I	0	0	0	0	0	36	0
5	0	0	I	0	0	0	0	0	0	0	9.5	132
6	0	E <sup>b</sup>	I	0	0	0	0	0	0	0	0	0.11
7	0	E	I	0	0.24	0	0	0	6.6	0	0	0
8	0	0	I	0	2.3	0	0	0	0	46	0	0
9	0	0	I	0	0	0	0	0	0	0.24	0	0
10	2.3	0	I	0	0	0	0	0	0	0	0	0
11	0	0	I	0	0	0	0	0	0	0	0	0
12	0	0	I	0	I	0	0	0	0	0	0	0
13	0.44	0	I	0	I	0	0	0	0	0	0	0
14	0	0	0	0	I	0.13	0	0	0	32	0	0
15	0.37	0.24	0	0	I	0.06	0	0	0	270	0	0
16	0.18	0	0	0	I	0	0	0	0	19	0	0
17	0	0	0	0	I	0	0	0	0	0.42	0	0
18	0	0	0	0	I	0	0	0	0	0	0	0
19	0	0	0	0	I	I	0	0	0	17	0	0
20	0	0	0	0	I	0	0	0	0	6.8	0	0
21	0	2.0	0	0	I	0	0	0	15	1.2	0	0
22	0	0.15	0	0	I	0	0	3.6	0	0	0.40	0
23	0	0.02	0	0	I	0	0	23	0	0	0	0
24	6.8	20	0	0	I	0	0	2.6	0	0	0	0
25	0.04	3.6	0	0	I	0	0	2.5	0	0	0	0
26	0	E	0	0	0	0	0	0	0	0.72	0	0
27	0	E	0	0	I	0	0	0	0	148	0	0
28	0	0	0	0	0.11	0	0	0.40	0	4.6	0	0
29	0	0	0	0		0	0	0	0	94	0	47
30	0	0	0	I		0	0	0	0	0	0.20	0
31	0		0	I		0		0		210	0	

<sup>a</sup> I represents ice present.<sup>b</sup> E represents equipment failure.

## E038 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0.68	2.1	0	0	0.17	0.7	0	1.1	0.64	38	2.1	3.4	46
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	6.8	20	0	0	2.3	3.2	0	23	15	270	36	132	270
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	4	11	2	18	0	0	0	0	0	0	0	35

**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<sup>2</sup>.

**Period of Record.** April 4, 2010, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 3 yr, 92 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 317 ft<sup>3</sup>/s, July 15, 2014, gage height 3.56 ft.



**E039.1 Stream gage upstream 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 bubble sensor. 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 gage 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 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.

#### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
27	5	21	1	21	1

**Datum Correction.** None

**Gage-Height Record.** The data logger referenced to the outside gage gave a complete and satisfactory record for the year, except for March 7–22, 2014, because of ice.

**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 (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.04	0.04	0	0	0	0	0.28	0.28	0.32	0.32	8	0.04
2	0.04	0.04	0	0	0	0	0.28	0.28	0.32	0.32	0.11	0.04
3	0.04	0.04	0	0	0	0	0.28	0.28	0.32	0.11	0.07	0.04
4	0.04	21	0	0	0	0.04	0.28	0.28	0.32	0.11	14	0.04
5	0.04	0.32	0	0	0	0	0.45	0.28	0.32	0.11	2.4	14
6	0.04	0.07	0	0	0	0	0.32	0.28	0.32	0.11	0.11	0.07
7	0.04	0.07	0	0	0	I*	0.28	0.28	0.83	0.11	0.07	0.07
8	0.04	0	0	0	0.04	I	0.28	0.28	0.35	19.3	0.07	0.04
9	0.04	0	0	0	0	I	0.28	0.28	0.35	1.02	0.07	0.07
10	0.11	0	0	0	0	I	0.28	0.28	0.32	0.14	0.18	0.04
11	0.11	0	0	0	0.04	I	0.28	0.28	0.32	0.14	0.07	0.04
12	0.11	0	0	0	0	I	0.28	0.28	0.32	0.11	0.11	0.04
13	0.11	0	0.04	0	0	I	0.32	0.28	0.32	0.11	0.04	0.04
14	0.07	0	0	0	0	I	0.28	0.28	0.32	15.12	0.04	0.07
15	0.93	0	0	0.04	0.04	I	0.28	0.28	0.32	317	0.04	0.04
16	0.64	0	0	0	0.04	I	0.28	0.28	0.32	12	0.04	0.07
17	0.07	0	0	0	0	I	0.28	0.28	0.32	0.14	0.04	0.04
18	0.07	0	0	0	0	I	0.28	0.28	0.32	0.14	0.04	0.07
19	0.07	0	0	0	0	I	0.28	0.28	0.32	9.06	0.04	0.04
20	0.04	0	0	0	0	I	0.28	0.28	0.32	0.93	0.04	0.04
21	0.04	0	0	0	0	I	0.28	0.28	0.54	0.07	0.04	0.04
22	0.04	0	0	0	0	I	0.28	0.35	0.35	0.07	0.04	0.04
23	0.04	0	0	0	0	0.28	0.32	4.5	0.35	0.07	0.04	0.04
24	4.7	0	0	0	0	0.28	0.28	4.7	0.32	0.07	0.04	0.04
25	0.45	0	0	0	0	0.28	0.28	2.2	0.32	0.04	0.04	0.04
26	0.07	0	0	0.04	0	0.28	0.28	0.35	0.32	0.04	0.07	0.04
27	0.07	0	0	0	0	0.28	0.28	0.35	0.32	22	0.04	0.04
28	0.07	0	0.04	0	0	0.28	0.28	0.35	0.32	2.7	0.04	0.04
29	0.04	0	0	0		0.28	0.28	0.32	0.32	66	0.07	0.11
30	0.04	0	0	0.04		0.32	0.28	0.32	0.32	0.11	0.04	0.04
31	0.04		0	0		0.28		0.32		250	0.04	

\* I represents ice present.

## E039.1 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	44	2.7	0.01	0	0.01	5	17	19	19	43	4.8	2.7	117
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	4.7	21	0.04	0.04	0.04	0.32	0.45	4.7	0.83	317	8	14	317
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0.04	0	0	0	0	0	0.28	0.28	0.32	0.04	0.04	0.04	0
<b>Missing Days</b>	0	0	0	0	0	16	0	0	0	0	0	0	16

**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<sup>2</sup>.

**Period of Record.** May 1999 to September 30, 2014.

**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.** 3 yr, 28 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 316 ft<sup>3</sup>/s, July 15, 2014, gage height 3.56 ft.



**E040 Stream gage 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. 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 gage.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
31	10	24	2	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None from levels.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record, except from October 1, 2013, through February 20, 2014, because of equipment malfunction.

**Rating.** The channel is about 15 ft wide and bends to the right above the gage 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 (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	E*	E	E	E	E	0	0	0	0	0	4.4	0
2	E	E	E	E	E	0	0	0	0	0	1.9	0
3	E	E	E	E	E	0	0	0	0	0	1.3	0
4	E	E	E	E	E	0	0	0	0	0	12	0
5	E	E	E	E	E	0	0	0	0	0	0.02	0
6	E	E	E	E	E	0	0	0	0	0	0.03	0
7	E	E	E	E	E	0	0	0	0	0	0.02	0
8	E	E	E	E	E	0	0	0	0	11	0.02	0
9	E	E	E	E	E	0	0	0	0	2.2	0.02	0
10	E	E	E	E	E	0	0	0	0	0	0.01	0
11	E	E	E	E	E	0	0	0	0	0	0.02	0
12	E	E	E	E	E	0	0	0	0	0	0	0
13	E	E	E	E	E	0	0	0	0	0	0	0
14	E	E	E	E	E	0	0	0	0	15	0	0
15	E	E	E	E	E	0	0	0	0	268	0	0
16	E	E	E	E	E	0	0	0	0	11	0	0
17	E	E	E	E	E	0	0	0	0	0.49	0	0
18	E	E	E	E	E	0	0	0	0	0.56	0	0
19	E	E	E	E	E	0	0	0	0	1.6	0	0
20	E	E	E	E	E	0	0	0	0	0.67	0	0
21	E	E	E	E	0	0	0	0	0	0.63	0	0
22	E	E	E	E	0	0	0	0	0	0	0	0
23	E	E	E	E	0	0	0	0	0	0	0	0
24	E	E	E	E	0	0	0	0	0	0.01	0	0
25	E	E	E	E	0	0	0	0	0	0.01	0	0
26	E	E	E	E	0	0	0	0	0	0.01	0	0
27	E	E	E	E	0	0	0	0	0	21	0	0
28	E	E	E	E	0	0	0	0	0	0.03	0	0
29	E	E	E	E		0	0	0	0	95	0	0
30	E	E	E	E		0	0	0	0	0	0	0
31	E		E	E		0		0		239	0	

\* E represents equipment failure.

**E040 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	E	E	E	0	0	0	0	0	45	7.7	0	52.7
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	E	E	E	E	0	0	0	0	0.	268	4.4	0	268
<b>Min Daily Peak (ft<sup>3</sup>/s )</b>	E	E	E	E	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	30	31	31	8	0	0	0	0	0	0	0	131

\* E represents equipment failure.

**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<sup>2</sup>.

**Period of Record.** May 4, 2010, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 3 yr, 392 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 210 ft<sup>3</sup>/s, July 31, 2014, gage height 2.87 ft.



**E042.1 Stream gage upstream 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. 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 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. Cellular telemetry with a speech modem provides remote data retrieval.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
35	11	25	1	25	2

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 13, 2013, through January 21, 2014, because of equipment malfunction.

**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 gage stations for verification. Flow is partially regulated by the Los Alamos Reservoir, located about 7.8 mi upstream.

**E042.1 Daily Mean Discharge (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	E*	E	0	0	0	0	0	0	0.05	0
2	18	0	E	E	0	0	0	0	0	0	0	0
3	18	0	E	E	0	0	0	0	0	0	0	0
4	5.4	1.1	E	E	0	0	0	0	0	0	3.4	0
5	0.04	1.2	E	E	0	0	0	0	0	0	0.11	0
6	0	1.1	E	E	0	0	0	0	0	0	0.04	0
7	0	0	E	E	0	0	0	0	0	0	0	0
8	0	0	E	E	0	0	0	0	0	12	0	0
9	0	0	E	E	0	0	0	0	0	3.8	0	0
10	0.66	0	E	E	0	0	0	0	0	0	0	0
11	0.76	0	E	E	0	0	0	0	0	0	0	0
12	0.58	0	E	E	0	0	0	0	0	0	0	0
13	0.07	E	E	E	0	0	0	0	0	0	0	0
14	0	E	E	E	0	0	0	0	0	4.2	0	0
15	0	E	E	E	0	0	0	0	0	115	0	0
16	0	E	E	E	0	0	0	0	0	0.69	0	0
17	0	E	E	E	0	0	0	0	0	0	0	0
18	0	E	E	E	0	0	0	0	0	0	0	0
19	0	E	E	E	0	0	0	0	0	0	0	0
20	0	E	E	E	0	0	0	0	0	0	0	0
21	0	E	E	E	0	0	0	0	0	0	0	0
22	0	E	E	0	0	0	0	0	0	0	0	0
23	0	E	E	0	0	0	0	0	0	0	0	0
24	0	E	E	0	0	0	0	0	0	0	0	0
25	0	E	E	0	0	0	0	0	0	0	0	0
26	0	E	E	0	0	0	0	0	0	0	0	0
27	0	E	E	0	0	0	0	0	0	0	0	0
28	0	E	E	0	0	0	0	0	0	0	0	0
29	0	E	E	0		0	0	0	0	92	0	0
30	0	E	E	0		0	0	0	0	0.07	0	0
31	0		E	0		0		0		210	0	

\* E represents equipment failure.

**E042.1 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	44	3.4	E*	E	0	0	0	0	0	42	2.5	0	91.9
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	5.4	1.2	E	0	0	0	0	0	0	210	3.4	0	200
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	18	31	21	0	0	0	0	0	0	0	0	70

\* E represents equipment failure.



**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<sup>2</sup>.

**Period of Record.** July 22, 2010, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 3 yr, 151 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 214 ft<sup>3</sup>/s, July 31, 2014, gage height 2.9 ft.



**E050.1 Stream gage 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. 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.

The station is equipped with two ISCO pump samplers (one 12-count 1-L glass or polyethylene bottle sampler and one 24-count polyethylene bottle sampler) to collect water-quality samples. The ISCOs 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 and encoder.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
57	8	23	2	23	1

**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.

**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 (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.18	0	0	0	0	0	0	0	0	0	0.35	0
2	6.4	0	0	0	0	0	0	0	0	0	0.76	0
3	6.7	0	0	0	0	0	0	0	0	0	0.04	0
4	4.7	3.2	0	0	0	0	0	0	0	0	0.25	0
5	0.18	3.2	0	0	0	0	0	0	0	0	0.11	0
6	0.11	0.15	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	0.07	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	1.2	0	0	0	0	0	0	0	0	0	0	0
11	1.3	0	0	0	0	0	0	0	0	0	0	0
12	1.2	0	0	0	0	0	0	0	0	0	0	0
13	0.18	0	0	0	0	0	0	0	0	0	0	0
14	0.11	0	0	0	0	0	0	0	0	0.18	0	0
15	0.04	0	0	0	0	0	0	0	0	49	0	0
16	0	0	0	0	0	0	0	0	0	1.6	0	0
17	0	0	0	0	0	0	0	0	0	0.11	0	0
18	0	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	0
20	0	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	0
22	0	0	0	0	0	0	0	0.07	0	0.0	0	0
23	0	0	0	0	0	0	0	0.04	0	0.0	0	0
24	0.04	0	0	0	0	0	0	0.04	0	0.0	0	0
25	0	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	0
27	0	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	0
29	0	0	0	0		0	0	0	0	63	0	0
30	0	0	0	0		0	0	0	0	0.18	0	0
31	0		0	0		0		0		214	0	

**E050.1 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	23	1.5	0	0	0	0	0	0.01	0	40	2.1	0	67
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	6.7	3.2	0	0	0	0	0	0.07	0	214	0.76	0	214
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	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<sup>2</sup>.

**Period of Record.** October 1, 2002, to September 30, 2014.

**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.** 3 yr, 56 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 71 ft<sup>3</sup>/s, July 31, 2014, gage height 2.4 ft.



**E055 Stream gage 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 an ISCO pump sampler (12-count 1-L glass 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.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
25	3	20	1	n/a*	n/a

\* n/a = Not applicable.

**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.

**Rating.** The channel comes into the gage from a left-to-right bend and bends hard left at about 100 ft below the gage. The bed consists of unstable sand and gravel with some boulders. The left bank downstream from the gage is heavily wooded, tending to hold the flow to the right, away from the reach of the gage. The lower end of any stage-discharge relation will be unstable here. Rating No. 2 was developed using the current year's measurements and one critical-depth measurement of 850 ft<sup>3</sup>/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.

One discharge measurement was made during the year.

**Discharge.** Discharge was computed using Rating No. 3.

**E055 Daily Peak Discharge (ft<sup>3</sup>/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	0.95	0
2	0	0	0	0	0	0	0	0	0	0	0.34	0
3	0	0	0	0	0	0	0	0	0	0	0.18	0
4	0	0	0	0	0	0	0	0	0	0	0.18	0
5	0	0	0	0	0	0	0	0	0	0	0.18	0
6	0	0	0	0	0	0	0	0	0	0	0.18	0
7	0	0	0	0	0	0	0	0	0	0.09	0.18	0
8	0	0	0	0	0	0	0	0	0	3.6	0.18	0
9	0	0	0	0	0	0	0	0	0	0.18	0.18	0
10	0	0	0	0	0	0	0	0	0	0.18	0.18	0
11	0	0	0	0	0	0	0	0	0	0.18	0.18	0
12	0	0	0	0	0	0	0	0	0	0.18	0.18	0
13	0	0	0	0	0	0	0	0	0	0.18	0	0
14	0	0	0	0	0	0	0	0	0	0.31	0	0
15	0	0	0	0	0	0	0	0	0	1.9	0	0
16	0	0	0	0	0	0	0	0	0	0.18	0	0
17	0	0	0	0	0	0	0	0	0	0.18	0	0
18	0	0	0	0	0	0	0	0	0	0.18	0	0
19	0	0	0	0	0	0	0	0	0	1.8	0	0
20	0	0	0	0	0	0	0	0	0	0.18	0	0
21	0	0	0	0	0	0	0	0	0	0.18	0	0
22	0	0	0	0	0	0	0	0	0	0.18	0	0
23	0	0	0	0	0	0	0	0	0	0.18	0	0
24	0	0	0	0	0	0	0	0	0	0.18	0	0
25	0	0	0	0	0	0	0	0	0	0.18	0	0
26	0	0	0	0	0	0	0	0	0	0.18	0	0
27	0	0	0	0	0	0	0	0	0	0.81	0	0
28	0	0	0	0	0	0	0	0	0	0.18	0	0
29	0	0	0	0		0	0	0	0	9.6	0	0
30	0	0	0	0		0	0	0	0	0.21	0	0
31	0		0	0		0		0		71	0	

**E055 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0	12	4.7	0	16.7
<b>Max Daily Peak (acre-ft)</b>	0	0	0	0	0	0	0	0	0	71	0.95	0	71
<b>Min Daily Peak ( acre-ft)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

**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<sup>2</sup>.

**Period of Record.** August 18, 2004, to September 30, 2014.

**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.** 3 yr, 2 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge 16 ft<sup>3</sup>/s, July 15, 2014, gage height 5.36 ft.



**E055.5 Stream gage 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 system is powered by a solar-panel battery system. The station is equipped with an ISCO pump sampler (12-count 1-L glass 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, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
26	4	20	1	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None. The levels from November 8, 2005, found the gage to be within limits. No corrections were needed.

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

**Rating.** The channel is straight for about 75 ft upstream and 100 ft downstream. The channel is trapezoidal with little vegetation. The bed is rock with gravel and should not be subject to very much movement.

Rating No. 1 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.

No discharge measurements were made during the year.

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



**E055.5 Daily Peak Discharge (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0 DS*	0 DS	0 DS	0	0.02	0
2	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0.02	0
3	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0.02	0.03
4	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0.02	0
5	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0.02	0.01
6	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0.02	0
7	0	0	0	0	0	0	0 DS	0 DS	0 DS	0	0	0
8	0	0	0	0	0	0	0 DS	0 DS	0 DS	4.3	0	0
9	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
10	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
11	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
12	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
13	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
14	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
15	0	0	0	0	0	0	0 DS	0 DS	0 DS	16	0	0
16	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
17	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
18	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
19	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
20	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
21	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
22	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
23	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
24	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
25	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
26	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
27	0	0	0	0	0	0	0 DS	0 DS	0 DS	1.7	0	0
28	0	0	0	0	0	0	0 DS	0 DS	0 DS	0.02	0	0
29	0	0	0	0		0	0 DS	0 DS	0 DS	0.03	0	0
30	0	0	0	0		0	0 DS	0 DS	0 DS	0.02	0	0
31	0		0	0		0		0 DS		12	0	

\* DS represents datum shift.

**E055.5 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0 DS*	0 DS	0 DS	1.4	0.12	0.04	1.6
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0.	0	0	0	0	0	16	0.02	0.03	16
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

\* DS represents datum shift.

**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<sup>2</sup>.

**Period of Record.** October 1, 2006, to September 30, 2014.

**Revised Record.** Period of record (2008).

**Average Volume.** 3 yr, 49 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<sup>3</sup>/s, September 13, 2013, gage height 8.6 ft.

**Maximum Discharge for Current Water Year.** Maximum discharge, 45 ft<sup>3</sup>/s, July 31, 2014, gage height 3.9 ft.



**E056 Stream gage 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. 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 or polyethylene bottles) to collect water-quality samples. An 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.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
25	7	20	1	n/a*	n/a

\* n/a = Not applicable.

**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 for the entire year.

**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 (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.02	0.01	0	0 DS*	0 DS	0	0 DS	0	0.02	0	0.33	0
2	0.01	0.01	0	0 DS	0 DS	0	0 DS	0	0.03	0	0.09	0
3	0.01	0.01	0	0 DS	0 DS	0	0 DS	0	0.03	0	0.08	0
4	0.01	0.99	0	0 DS	0 DS	0	0 DS	0	0.02	0	0.36	0
5	0.01	0.01	0	0 DS	0 DS	0	0 DS	0	0.02	0	0.10	0
6	0	0.01	0	0 DS	0 DS	0	0 DS	0	0.02	0	0.09	0
7	0	0	0	0 DS	0 DS	0	0 DS	0	0.02	0	0.08	0
8	0	0	0	0 DS	0 DS	0	0 DS	0	0.02	16	0.07	0
9	0	0	0	0 DS	0 DS	0	0 DS	0	0.02	0.07	0.06	0
10	0	0	0	0 DS	0 DS	0	0 DS	0	0.01	0.03	0.05	0
11	0	0	0	0 DS	0 DS	0	0 DS	0	0	0.03	0.05	0
12	0	0	0	0 DS	0 DS	0	0 DS	0	0	0.03	0.05	0
13	0	0	0	0 DS	0 DS	0	0 DS	0	0	0.03	0.04	0
14	0	0	0	0 DS	0 DS	0	0 DS	0	0	1.2	0.03	0
15	0	0	0	0 DS	0 DS	0	0 DS	0	0	31	0.03	0
16	0	0	0	0 DS	0 DS	0	0 DS	0	0	0.34	0.03	0
17	0.01	0	0	0 DS	0 DS	0	0 DS	0	0	0.03	0.02	0
18	0.01	0	0	0 DS	0 DS	1.7	0 DS	0	0	0.03	0.01	0
19	0.02	0	0	0 DS	0 DS	0.02	0 DS	0	0	5.5	0	0
20	0.02	0	0	0 DS	0 DS	0.02	0 DS	0	0	0.04	0	0
21	0.02	0	0	0 DS	0 DS	0.02	0 DS	0	0	0.03	0	0
22	0.02	0	0	0 DS	0 DS	0.01	0 DS	0	0	0.04	0	0
23	0.02	0	0	0 DS	0 DS	0.01	0 DS	0.52	0	0.04	0	0
24	0.02	0	0	0 DS	0 DS	0.01	0 DS	0.16	0	0.04	0	0
25	0.02	0	0	0 DS	0 DS	0.01	0 DS	0.02	0	0.04	0	0
26	0.01	0	0	0 DS	0 DS	0.01	0 DS	0.02	0	0.03	0	0
27	0.01	0	0	0 DS	0 DS	0.01	0 DS	0.02	0	5.4	0	0
28	0.01	0	0	0 DS	0 DS	0.01	0 DS	0.02	0	0.05	0	0
29	0.01	0	0	0 DS		0.01	0 DS	0.02	0	24	0	0
30	0.01	0	0	0 DS		0.01	0 DS	0.02	0	0.04	0	0
31	0.01		0	0 DS		0		0.03		45	0	

\* DS represents datum shift.

**E056 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	0.33	0.1	0	0 DS*	0 DS	0.56	0 DS	0.26	0.35	8.4	1.7	0	11.7
<b>Max Daily Peak (acre-ft)</b>	0.02	0.99	0	0 DS	0 DS	1.7	0 DS	0.52	0.03	45	0.36	0	45
<b>Min Daily Peak (acre-ft)</b>	0	0	0	0 DS	0 DS	0	0 DS	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

\* DS represents datum shift.

**E059.5 Pueblo Canyon below LAC 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<sup>2</sup>.

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

**Revised Record.** None.

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

**Average Volume.** <1 yr, 52 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 97 ft<sup>3</sup>/s, July 31, 2014, gage height, 6.23 ft.



**E059.5 Stream gage 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 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
12	3	n/a*	n/a	n/a	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record from May 10, 2014, through September 30, 2014. The gage was installed on May 10, 2014.

**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.

No discharge measurements were made during the year.

**Discharge.** Discharge was computed using Rating No. 1.

E059.5 Daily Peak Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	ND*	ND	ND	ND	ND	ND	ND	ND	0.07	0	0.47	1.4
2	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0.85
3	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	1.0
4	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0	1.8	0.10
5	ND	ND	ND	ND	ND	ND	ND	ND	0	0	1.1	0.13
6	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0.85	0.85
7	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0.85	2.2
8	ND	ND	ND	ND	ND	ND	ND	ND	0	0.17	1.8	0.50
9	ND	ND	ND	ND	ND	ND	ND	ND	0	0.17	1.7	0.20
10	ND	ND	ND	ND	ND	ND	ND	0	0	0.17	13	0.85
11	ND	ND	ND	ND	ND	ND	ND	0.27	0	0.17	1.7	0.13
12	ND	ND	ND	ND	ND	ND	ND	0.33	0	0.17	1.4	0.13
13	ND	ND	ND	ND	ND	ND	ND	0.03	0	0.17	1.0	0.17
14	ND	ND	ND	ND	ND	ND	ND	0.03	0	0.17	1.4	0.17
15	ND	ND	ND	ND	ND	ND	ND	0	0	8.4	1.1	0.17
16	ND	ND	ND	ND	ND	ND	ND	0	0	0	1.1	0.17
17	ND	ND	ND	ND	ND	ND	ND	0	0	0	1.0	0.40
18	ND	ND	ND	ND	ND	ND	ND	0.13	0	0	1.4	0.17
19	ND	ND	ND	ND	ND	ND	ND	0	0	0	0.85	0.17
20	ND	ND	ND	ND	ND	ND	ND	0.85	0	0.1	1.4	0.17
21	ND	ND	ND	ND	ND	ND	ND	0.60	0	0.1	1.0	0.27
22	ND	ND	ND	ND	ND	ND	ND	0.60	0	0.1	1.8	0.17
23	ND	ND	ND	ND	ND	ND	ND	0.43	0	1.4	1.4	0.85
24	ND	ND	ND	ND	ND	ND	ND	0.40	0	1.4	1.7	2.4
25	ND	ND	ND	ND	ND	ND	ND	0.37	0	1.5	1.4	0.33
26	ND	ND	ND	ND	ND	ND	ND	0.27	0	1.7	1.7	2.0
27	ND	ND	ND	ND	ND	ND	ND	0.27	0	1.7	1.8	3.1
28	ND	ND	ND	ND	ND	ND	ND	0.17	0	1.7	1.8	3.3
29	ND	ND	ND	ND		ND	ND	0.27	0	44	1.4	3.3
30	ND	ND	ND	ND		ND	ND	0.23	0	2.8	0.85	3.3
31	ND		ND	ND		ND		0.27		97	0.20	

\* ND represents No data. Sampler was installed on May 10, 2014.

## E059.5 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	ND*	ND	ND	ND	ND	ND	ND	2.2	0.01	27	14	9.2	52
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	ND	ND	ND	ND	ND	ND	ND	0.85	0.07	97	1.8	3.3	97
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0
<b>Missing Days</b>	31	30	31	31	28	31	30	9	0	0	0	0	221

\* ND represents No data. Sampler was installed on May 10, 2014.

**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<sup>2</sup>.

**Period of Record.** April 15, 2010, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 3 yr, 72 acre-ft/yr.

**Maximum Discharge for Current Water Year.** Maximum discharge, 1400 ft<sup>3</sup>/s, September 13, 2013, gage height 6.23 ft.

**Maximum Discharge for Period of Record.** Maximum discharge, 54 ft<sup>3</sup>/s, July 31, 2014, gage height, 1.41 ft.



**E060.1 Stream gage 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 2.5-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 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 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 and bubbler.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
62	18	21	1	21	1

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for June 8 and 9, 2014, because of equipment malfunction.

**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 (ft<sup>3</sup>/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	0.86	0
2	0	0	0	0	0	0	0	0	0	0	0.29	0
3	0	0	0	0	0	0	0	0	0	0	0.29	0
4	0	1.7	0	0	0	0	0	0	0	0	0.08	0
5	0	1.6	0	0	0	0	0	0	0	0	0	0
6	0	2.3	0	0	0	0	0	0	0	0	0	0
7	0	2.2	0	0	0	0	0	0	0	0	0	0
8	0	1.7	0	0	0	0	0	0	E	0	0	0
9	0	0.25	0	0	0	0	0	0	E	0	0	0
10	0	0.04	0	0	0	0	0	0	0	0	0	0
11	0	1.19	0	0	0	0	0	0	0	0	0	0
12	0	1.07	0	0	0	0	0	0	0	0	0	0
13	0	0.50	0	0	0	0	0	0	0	0	0	0
14	0	0.22	0	0	0	0	0	0	0	0.18	0	0
15	0	0	0	0	0	0	0	0	0	0.86	0	0
16	0	0	0	0	0	0	0	0	0	0.15	0	0
17	0	0	0	0	0	0	0	0	0	0.08	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0.11	0	0	0	0	0	0	0	0	0
20	0	0	0.08	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	0.50	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		54	0	

**E060.1 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	15	0.01	0	0	0	0	0	0	10	2.3	0	27
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	2.3	0.11	0	0	0	0	0	0	54	0.86	0	54
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	2	0	0	0	2

### 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 San Ildefonso Pueblo. 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<sup>2</sup>. 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 gage discharge stations within Sandia watershed. Station E123 is located downstream of the Sandia wetland. Gage 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.

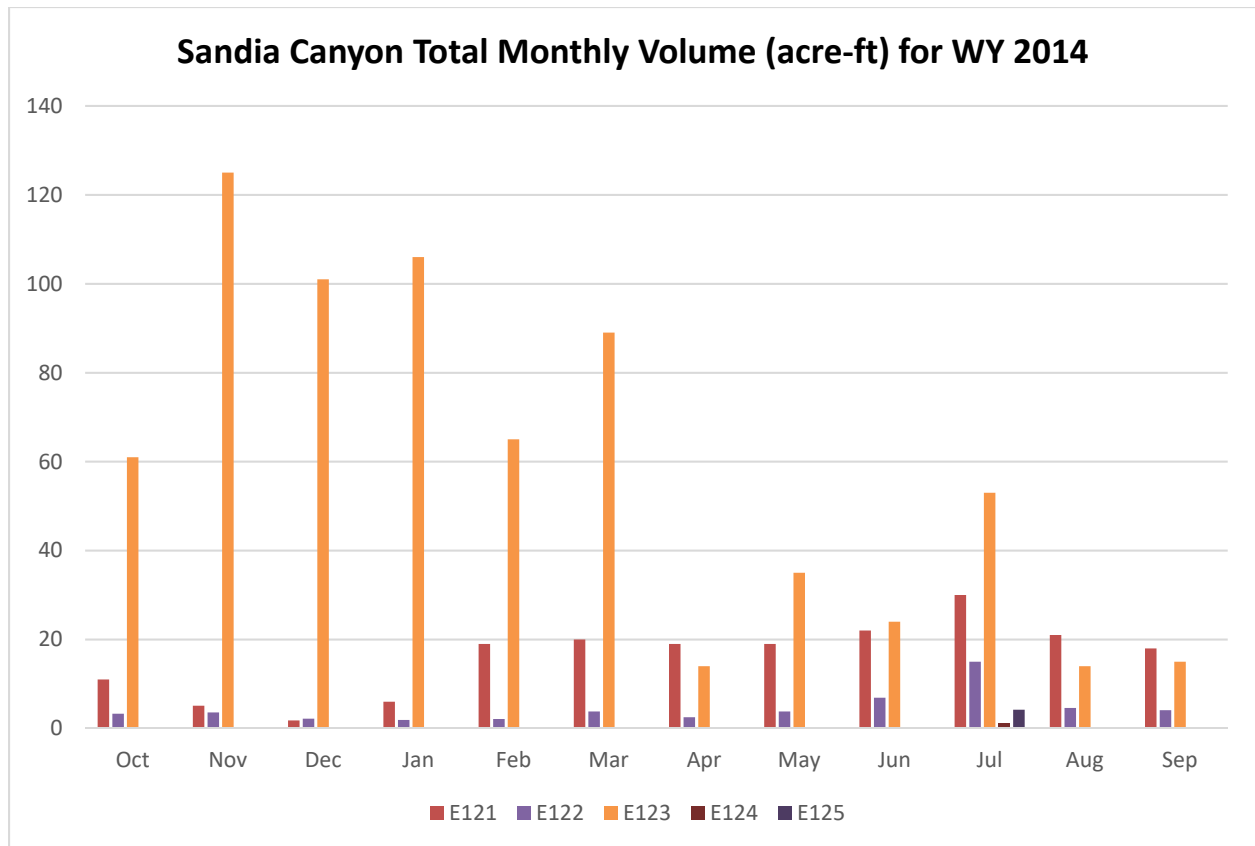


Figure 4 The total monthly volume (acre-ft) for WY2014 for Sandia Canyon

**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<sup>2</sup>.

**Period of Record.** October 1, 2006, to September 30, 2014.

**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.** 3 yr, 275 acre-ft/yr.

**Maximum Discharge for Current Water Year.** Maximum discharge, 191 ft<sup>3</sup>/s, June 21, 2002, from peak-flow computation, gage height 7.62 ft.

**Maximum Discharge for Period of Record.** Maximum discharge, 66 ft<sup>3</sup>/s, July 31, 2014, gage height 7.25 ft.



**E121 Stream gage 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 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 direct measurements above the wading stage.

#### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
20	3	13	1	14	0

**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 for January 23, 2014, when maintenance was performed.

**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 gage. The low-water control is a bedrock riffle below the gage.

Rating No. 5 was developed based on previous measurements verified with the current year's measurements.

Eight discharge measurements were made during the year.

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

E121 Daily Mean Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.37	0.24	0.16	0.02	0.35	1.2	0.41	0.39	0.35	0.44	1.3	0.34
2	0.35	0.20	0.27	0.02	0.35	0.48	0.43	0.34	0.35	0.46	0.41	0.39
3	0.34	0.21	0.29	0.02	0.35	0.35	0.39	0.41	0.35	0.41	0.41	0.37
4	0.35	0.44	0.24	0.02	0.37	0.43	0.39	0.34	0.30	0.43	23	0.34
5	0.37	0.34	0.03	0.02	0.46	0.35	0.39	0.32	0.29	0.41	0.41	3.1
6	0.41	0.23	0.03	0.02	0.46	0.35	0.37	0.29	0.41	0.41	0.41	0.37
7	0.35	0.29	0.02	0.02	0.46	0.30	0.46	0.29	4.2	63	0.39	0.35
8	0.37	0.27	0.02	0.02	0.46	0.35	0.41	0.30	0.41	61	0.39	0.39
9	0.39	0.26	0.02	0.02	0.35	0.30	0.39	0.30	0.41	2.5	0.50	0.37
10	1.5	0.32	0.04	0.02	0.46	0.34	0.39	0.43	0.39	0.64	0.43	0.34
11	0.34	0.27	0.06	0.02	0.37	0.34	0.37	0.27	0.34	0.39	0.39	0.26
12	0.32	0.34	0.07	0.02	0.37	0.34	0.43	0.29	0.43	0.30	0.37	0.32
13	0.37	0.24	0.12	0.02	0.35	0.39	0.48	0.32	0.48	0.29	0.37	0.34
14	0.32	0.26	0.09	0.02	0.39	1.1	0.30	0.35	0.41	0.32	0.37	0.35
15	0.34	0.27	0.15	0.02	0.37	0.39	0.35	0.34	0.41	10	10	0.41
16	0.64	0.23	0.24	0.02	0.35	0.34	0.37	0.34	0.41	2.6	0.35	0.39
17	0.35	0.26	0.26	0.02	0.39	0.35	0.32	0.34	0.41	0.68	0.39	0.64
18	0.35	0.21	0.26	0.02	0.37	0.34	0.34	0.44	0.41	0.37	0.48	0.39
19	0.35	0.32	0.02	0.03	0.37	0.32	0.34	0.32	0.41	11	0.35	0.61
20	0.32	0.17	0.02	0.02	0.34	0.39	0.35	0.29	0.34	0.43	0.29	0.39
21	0.32	0.24	0.02	0.02	0.37	0.32	0.34	0.30	1.7	0.43	0.37	0.37
22	0.30	0.11	0.02	0.02	0.37	0.32	0.32	1.6	0.39	0.32	0.81	0.43
23	0.30	0.03	0.02	T	0.35	0.35	0.34	13	0.43	0.23	0.35	0.41
24	0.50	0.03	0.02	0.34	0.39	0.37	0.34	1.40	0.43	0.21	0.35	0.32
25	0.26	0.11	0.02	0.39	0.35	0.39	0.43	0.77	0.37	0.32	0.41	0.21
26	0.32	0.12	0.02	0.37	0.37	0.34	0.34	0.35	0.34	0.39	0.46	0.29
27	0.21	0.10	0.02	0.37	1.0	0.35	0.32	0.34	0.34	29	0.39	0.35
28	0.24	0.15	0.02	0.35	0.34	0.37	0.32	0.35	0.41	0.43	0.24	0.34
29	0.27	0.17	0.02	0.41		0.39	0.37	0.43	0.41	36	0.21	4.2
30	0.23	0.23	0.02	0.35		0.34	0.29	0.35	0.41	0.27	0.35	0.37
31	0.24		0.02	0.37		0.35		0.35		66	0.35	

## E121 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	11	5.1	1.8	6	19	20	19	19	22	30	21	18	191
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	1.5	0.44	0.29	0.41	1.0	1.2	0.48	13	4.2	66	23	4.2	66
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0.23	0.11	0.02	0.02	0.34	0.30	0.29	0.29	0.29	0.21	0.21	0.21	0.02
<b>Missing Days</b>	0	0	0	1	0	0	0	0	0	0	0	0	1

**E122 Sandia Canyon near Roads and Grounds at TA-3**

**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<sup>2</sup>.

**Period of Record.** October 1, 2006, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 3 yr, 61 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 19 ft<sup>3</sup>/s, July 31, 2014, gage height 7.62 ft.



**E122 Stream gage downstream 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. 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 provision has been made for discharge measurements above the wading stage.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
19	3	12	0	13	2

**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 the entire year.

**Rating.** The channel is straight for about 20 ft above the gage 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 gage. The low-water control is a bedrock riffle below the gage.

Rating No. 2 was developed based on the measurements made the previous year and verified with measurements made this year.

Seven discharge measurements were made during the year.

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



E122 Daily Mean Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.07	0.15	0.17	0.13	0.13	0.98	0.17	0.15	0.21	0.29	0.34	0.11
2	0.19	0.18	0.18	0.11	0.14	0.32	0.15	0.17	0.17	0.26	0.13	0.14
3	0.16	0.16	0.20	0.19	0.15	0.16	0.12	0.17	0.18	0.39	0.14	0.15
4	0.16	2.3	0.18	0.13	0.14	0.16	0.14	0.18	0.18	0.39	5.3	0.12
5	0.15	0.25	0.17	0.11	0.12	0.17	0.15	0.15	0.26	0.27	0.15	1.6
6	0.18	0.15	0.16	0.11	0.13	0.17	0.15	0.17	0.26	0.34	0.15	0.11
7	0.16	0.19	0.16	0.13	0.15	0.19	0.13	0.17	2.4	13	0.14	0.12
8	0.15	0.17	0.16	0.13	0.15	0.15	0.16	0.17	0.29	9.7	0.14	0.13
9	0.15	0.16	0.14	0.15	0.16	0.19	0.16	0.19	0.25	0.34	0.15	0.11
10	1.7	0.18	0.16	0.12	0.22	0.20	0.19	0.17	0.33	0.93	0.13	0.12
11	0.16	0.18	0.15	0.13	0.17	0.18	0.16	0.17	0.25	0.34	0.13	0.14
12	0.17	0.17	0.18	0.14	0.16	0.13	0.15	0.17	0.26	0.29	0.13	0.14
13	0.53	0.16	0.16	0.14	0.17	0.13	0.54	0.15	0.49	0.30	0.13	0.13
14	0.15	0.17	0.17	0.13	0.18	0.90	0.15	0.18	0.25	3.6	0.13	0.13
15	0.56	0.58	0.16	0.15	0.20	0.22	0.16	0.19	0.29	3.7	3.0	0.11
16	0.62	0.33	0.16	0.15	0.19	0.15	0.15	0.18	0.25	1.2	0.13	0.11
17	0.17	0.16	0.18	0.17	0.19	0.14	0.17	0.30	0.27	0.27	0.12	0.11
18	0.18	0.17	0.13	0.15	0.16	0.13	0.14	0.33	0.26	0.30	0.13	0.14
19	0.17	0.18	0.15	0.17	0.18	0.12	0.16	0.17	0.26	5.2	0.14	0.13
20	0.20	0.16	0.13	0.18	0.14	0.17	0.15	0.21	0.26	0.30	0.13	0.12
21	0.16	1.0	0.13	0.18	0.18	0.15	0.16	0.19	1.4	0.37	0.13	0.12
22	0.16	0.34	0.13	0.17	0.19	0.12	0.14	1.4	0.32	0.29	0.27	0.15
23	0.17	0.19	0.13	0.13	0.17	0.15	0.13	5.8	0.26	0.27	0.12	0.12
24	1.5	0.18	0.17	0.17	0.16	0.17	0.14	1.3	0.27	0.30	0.13	0.15
25	0.23	0.23	0.14	0.17	0.19	0.16	0.18	0.45	0.29	0.27	0.13	0.14
26	0.17	0.18	0.15	0.18	0.15	0.15	0.26	0.21	0.26	0.34	0.15	0.14
27	0.17	0.15	0.12	0.17	0.95	0.12	0.17	0.21	0.27	6.2	0.14	0.15
28	0.16	0.16	0.16	0.14	0.17	0.13	0.13	0.22	0.26	1.1	0.11	0.13
29	0.17	0.17	0.13	0.20		0.13	0.17	0.18	0.29	12	0.15	0.56
30	0.19	0.22	0.12	0.20		0.14	0.13	0.21	0.27	0.49	0.14	0.15
31	0.15		0.11	0.15		0.14		0.18		19	0.15	

## E122 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	3.3	3.6	2.2	1.9	2.1	3.1	2.5	3.8	6.9	15	4.6	4.1	53.8
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	1.7	2.3	0.20	0.20	0.95	0.98	0.26	5.8	2.4	19	5.3	1.6	19
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0.07	0.15	0.11	0.11	0.13	0.12	0.13	0.15	0.21	0.27	0.11	0.11	0.07
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

### **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<sup>2</sup>.

**Period of Record.** August 1, 1999, to September 30, 2014.

**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.** 3 yr, 607 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 109 ft<sup>3</sup>/s, July 31, 2014, gage height 4.89 ft.



**E123 Stream gage 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 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 discharge measurements above the wading stage.

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

#### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
23	3	13	0	13	0

**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 for the year, except for December 10, 11, 24–28, 30, and 31, 2013; January 1, 2, 3, 5–9, 13–19, 21–26, 28, and 29, 2014; and February 5 and 6, 2014, when the gage was affected by 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 gage. 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.

Four discharge measurements were made during the year.

**Discharge.** Discharge was computed from Rating No. 5.

E123 Daily Mean Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.7	4.8	2.7	I*	1.9	7.2	0.66	0.66	0.90	0.55	2.5	0.28
2	1.8	4.8	3.5	I	1.9	4.1	0.50	0.78	0.97	0.55	0.13	0.32
3	0.60	4.8	2.8	I	2.0	2.3	0.60	1.0	0.66	0.45	0.10	0.28
4	0.50	15	3.5	2.4	2.1	2.6	0.66	1.1	0.25	0.45	32	0.15
5	0.97	3.5	2.7	I	I	2.6	0.66	0.66	0.15	0.50	0.18	5.6
6	1.7	3.5	10	I	I	2.2	0.25	0.25	0.41	0.50	0.28	0.32
7	0.72	3.3	12	I	3.1	1.6	1.1	0.28	12	80	0.25	0.36
8	0.78	4.1	3.0	I	2.7	2.0	1.5	0.41	0.90	76	0.21	0.36
9	1.1	3.1	3.2	I	2.2	1.4	1.0	0.45	0.78	2.1	0.28	0.32
10	11	3.2	I	2.2	3.1	1.9	0.66	0.45	0.72	1.3	0.25	0.25
11	1.6	3.1	I	3.0	2.4	1.7	0.78	0.21	0.41	0.66	0.21	0.15
12	1.2	3.6	3.0	2.3	2.2	1.9	0.21	0.25	0.78	0.21	0.18	0.25
13	3.3	4.0	3.7	I	2.3	2.0	2.0	0.36	1.5	0.25	0.18	0.28
14	0.90	3.3	3.3	I	2.6	6.0	0.36	0.66	0.60	12	0.15	0.32
15	6.0	3.5	5.3	I	2.4	3.3	0.78	0.55	0.55	20	12	0.45
16	6.0	3.5	2.5	I	2.1	1.7	0.84	0.60	0.55	2.8	0.15	0.41
17	1.8	4.0	2.5	I	2.4	2.0	0.10	0.55	0.55	0.55	0.36	0.66
18	1.4	5.0	2.8	I	2.3	2.3	0.84	0.84	0.55	0.25	0.32	0.45
19	1.4	7.9	2.5	I	2.2	2.1	0.21	0.28	0.50	18	0.28	0.55
20	1.3	7.2	2.3	2.6	1.9	2.4	0.10	0.10	0.18	0.25	0.15	0.36
21	1.4	8.7	2.3	I	2.5	1.7	0.28	0.41	3.2	0.50	0.25	0.36
22	2.0	3.5	2.4	I	2.4	1.6	0.15	7.9	0.55	0.18	1.2	0.50
23	6.8	2.8	2.8	I	2.2	1.2	0.32	18	0.60	0.07	0.28	0.45
24	13	3.5	I	I	2.6	1.9	0.21	9.8	0.50	0.05	0.32	0.15
25	6.1	4.0	I	I	2.2	2.0	0.41	3.5	0.15	0.13	0.36	0.10
26	6.0	3.8	I	I	2.2	1.6	0.55	1.6	0.18	0.28	0.55	0.25
27	6.0	3.7	I	2.1	6.3	1.3	0.50	1.5	0.18	26	0.36	0.32
28	6.0	2.5	I	I	2.3	1.4	0.90	1.2	0.50	3.2	0.10	0.32
29	6.0	3.2	2.1	I		1.4	0.45	1.1	0.50	62	0.10	2.8
30	6.3	3.5	I	2.2		0.28	0.50	1.0	0.60	0.28	0.28	0.28
31	5.2		I	2.2		0.60		0.90		109	0.32	

\* I represents ice present.

## E123 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	61	125	101	106	65	89	14	35	24	53	14	15	702
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	6.8	15	12	3.0	6.3	7.2	1.5	9.8	12	109	32	5.6	109
<b>Min Daily (ft<sup>3</sup>/s)</b>	0.78	3.1	2.1	2.1	1.9	1.3	0.21	0.21	0.25	0.21	0.10	0.15	12
<b>Missing Days</b>	0	0	9	23	2	0	0	0	0	0	0	0	34

**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<sup>2</sup>.

**Period of Record.** October 1, 2013, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** <1 yr, 1 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge 50 ft<sup>3</sup>/s, July 31, 2014, gage height 2.2 ft.



**E124 Stream gage 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 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 measurements above the wading stage.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
9	2	7	0	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record from July 25, 2014, through September 30, 2014. The gage was installed on July 25, 2014.

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

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

E124 Daily Peak Discharge (ft<sup>3</sup>/s)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	IA*	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
2	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
3	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
4	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
5	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
6	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
7	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
8	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
9	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
10	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
11	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
12	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
13	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
14	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
15	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
16	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
17	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
18	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
19	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
20	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
21	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
22	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
23	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
24	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0
25	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0
26	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0
27	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0
28	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0
29	IA	IA	IA	IA		IA	IA	IA	IA	0.20	0	0
30	IA	IA	IA	IA		IA	IA	IA	IA	0	0	0
31	IA		IA	IA		IA		IA		50	0	

\* IA represents inactive. The gage was returned to service July 25.

## E124 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	IA*	IA	IA	IA	IA	IA	IA	IA	IA	1.1	0	0	1.1
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	IA	IA	IA	IA	IA	IA	IA	IA	IA	50	0	0	50
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0	0
<b>Missing Days</b>	31	30	31	31	28	31	30	31	30	24	0	0	297

\* IA represents inactive. The gage was returned to service July 25.

**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<sup>2</sup>.

**Period of Record.** October 1, 1994, to September 30, 2014.

**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.** 3 yr, 6 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 55 ft<sup>3</sup>/s, July 31, 2014, gage height 3.89 ft.



**E125 Stream gage 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. 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
22	6	7	1	n/a*	n/a

\* n/a = Not applicable.

**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 for July 2 through July 28, 2014, because of equipment malfunction.

**Rating.** The channel is straight for 150 ft above and 100 ft below the gage. 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<sup>3</sup>/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	E*	0	0
3	0	0	0	0	0	0	0	0	0	E	0	0
4	0	0	0	0	0	0	0	0	0	E	0	0
5	0	0	0	0	0	0	0	0	0	E	0	0
6	0	0	0	0	0	0	0	0	0	E	0	0
7	0	0	0	0	0	0	0	0	0	E	0	0
8	0	0	0	0	0	0	0	0	0	E	0	0
9	0	0	0	0	0	0	0	0	0	E	0	0
10	0	0	0	0	0	0	0	0	0	E	0	0
11	0	0	0	0	0	0	0	0	0	E	0	0
12	0	0	0	0	0	0	0	0	0	E	0	0
13	0	0	0	0	0	0	0	0	0	E	0	0
14	0	0	0	0	0	0	0	0	0	E	0	0
15	0	0	0	0	0	0	0	0	0	E	0	0
16	0	0	0	0	0	0	0	0	0	E	0	0
17	0	0	0	0	0	0	0	0	0	E	0	0
18	0	0	0	0	0	0	0	0	0	E	0	0
19	0	0	0	0	0	0	0	0	0	E	0	0
20	0	0	0	0	0	0	0	0	0	E	0	0
21	0	0	0	0	0	0	0	0	0	E	0	0
22	0	0	0	0	0	0	0	0	0	E	0	0
23	0	0	0	0	0	0	0	0	0	E	0	0
24	0	0	0	0	0	0	0	0	0	E	0	0
25	0	0	0	0	0	0	0	0	0	E	0	0
26	0	0	0	0	0	0	0	0	0	E	0	0
27	0	0	0	0	0	0	0	0	0	E	0	0
28	0	0	0	0	0	0	0	0	0	E	0	0
29	0	0	0	0		0	0	0	0	3.4	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		55	0	

\* E represents equipment failure.

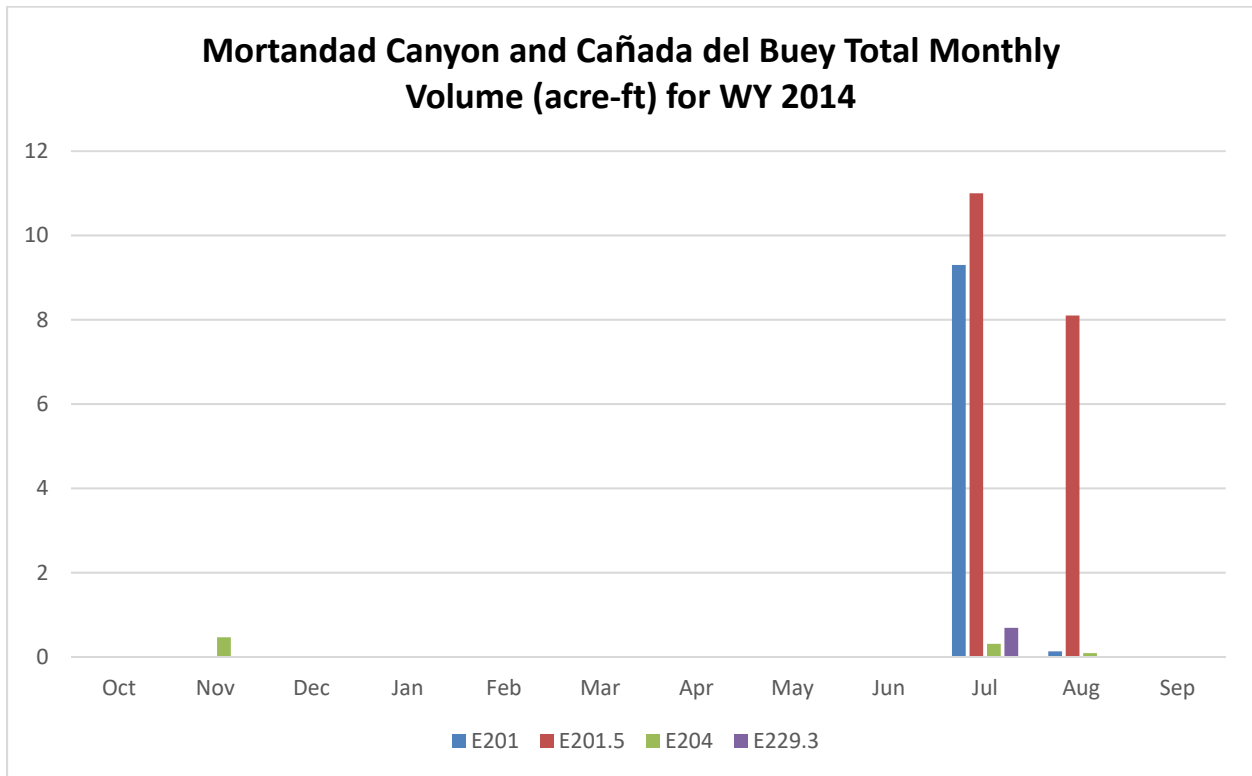
**E125 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0	4.2	0	0.26	4.5
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	55	0	6.3	55
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	27	0	0	27

**Mortandad Watershed**

The Mortandad Canyon watershed is located in the central portion of LANL and covers approximately 10 mi<sup>2</sup>. 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 San Ildefonso Pueblo 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, San Ildefonso Pueblo 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 gage stations within the Mortandad Canyon and Cañada del Buey watershed.



**Figure 5 Total monthly volume (acre-ft) for WY2014 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<sup>2</sup>.

**Period of Record.** October 1, 2006, to September 30, 2014.

**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.** 3 yr, 10 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 93 ft<sup>3</sup>/s, July 31, 2014, gage height 2.73 ft.



**E201 Stream gage 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 mounted on a 10-ft flume. 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.

#### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
17	8	5	2	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for November 23, 2013, through December 14, 2013; and February 13 and 14, 2014, when the gage was affected by ice.

**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<sup>3</sup>/s)**

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	0	I	0	0	0	0	0	0	0	1.2	0
5	0	0	I	0	0	0	0	0	0	0	0	0
6	0	0	I	0	0	0	0	0	0	0	0	0
7	0	0	I	0	0	0	0	0	0	0	0	0
8	0	0	I	0	0	0	0	0	0	71	0	0
9	0	0	I	0	0	0	0	0	0	0.60	0	0
10	0	0	I	0	0	0	0	0	0	0	0	0
11	0	0	I	0	0	0	0	0	0	0	0	0
12	0	0	I	0	0	0	0	0	0	0	0	0
13	0	0	I	0	I	0	0	0	0	0	0	0
14	0	0	I	0	I	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	4.9	0	0
16	0	0	0	0	0	0	0	0	0	0.29	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	0.79	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	I	0	0	0	0	0	0	0	0	0	0
24	0	I	0	0	0	0	0	0	0	0	0	0
25	0	I	0	0	0	0	0	0	0	0	0	0
26	0	I	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	1.87	0	0
30	0	I	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		93	0	

**E201 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0	9.3	0.13	0	9.43
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	93	1.2	0	93
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	8	14	15	2	0	0	0	0	0	0	0	39

**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<sup>2</sup>.

**Period of Record.** October 2000 to September 30, 2014.

**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.** 3 yr, 9 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 105 ft<sup>3</sup>/s, July 14, 2014, gage height 4.0 ft.



**E201.5 Stream gage 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 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
22	8	5	0	n/a*	n/a

\* n/a = Not applicable.

**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.

**Gage-Height Record.** The data logger reference to the outside staff gage gave a complete and satisfactory record for the year.

**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.

No discharge measurements were made during the year.

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



**E201.5 Daily Peak Discharge (ft<sup>3</sup>/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	23	0
4	0	0	0	0	0	0	0	0	0	0	2.9	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	105	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	3.8	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	2.0	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
30	0	0	0	0		0	0	0	0	16	0	0
31	0		0	0		0		0		3.9	0	

**E201.5 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0	11	8.1	0	19.1
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	105	23	0	105
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

### **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<sup>2</sup>.

**Period of Record.** October 1, 1993, to September 30, 2014.

**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.** 3 yr, 2 acre-ft.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 6.5 ft<sup>3</sup>/s, July 30, 2014, gage height 1.85 ft.



**E204 Stream gage 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. 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 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.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
14	4	5	2	n/a*	n/a

\* n/a = Not applicable.

**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.

**Rating.** The channel is straight above and below the gage 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 gage.

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<sup>3</sup>/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	0.20	0	0	0	0	0	0	0	0	0	0
4	0	0.10	0	0	0	0	0	0	0	0	0.18	0
5	0	0.06	0	0	0	0	0	0	0	0	0	0
6	0	0.04	0	0	0	0	0	0	0	0	0	0
7	0	0.04	0	0	0	0	0	0	0	0	0	0
8	0	0.02	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0.18	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
30	0	0	0	0		0	0	0	0	6.5	0	0
31	0		0	0		0		0		0.02	0	

**E204 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0.46	0	0	0	0	0	0	0	0.31	0.09	0	0.40
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0.20	0	0	0	0	0	0	0	6.5	0.18	0	6.5
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

**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<sup>2</sup>.

**Period of Record.** April 24, 2013, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 2 yr, 4 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 11 ft<sup>3</sup>/s, July 8, 2014, gage height 1.21 ft.



**E229.3 Stream gage downstream view**

**Equipment.** The station is equipped with a Sutron 9210 data logger (5-min interval), an MDS radio transceiver, and a Sutron Accubar air-purge bubble sensor, housed in a NEMA shelter. Also, a Milltronics Sonic probe sits atop a 2-ft-wide by 1.5-ft-deep Parshall flume. 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 bubble sensor and probe.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
12	4	5	3	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record except for November 22, 2013, through December 4, 2013, when the gage was affected by ice.

**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<sup>3</sup>/s)**

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	6.0	0	0
3	0	0	I	0	0	0	0	0	0.31	0	0	0
4	0	0	I	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	0.02	0	0	0	0	0	0	11	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	0.05	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	I	0	0	0	0	0	0	0	0	0	0
23	0	I	0	0	0	0	0	0	0	0	0	0
24	0	I	0	0	0	0	0	0	0	0.31	0	0
25	0	I	0	0	0	0	0	0	0	0	0	0
26	0	I	0	0	0	0	0	0	0	0.27	0.27	0
27	0	I	0	0	0	0	0	0	0	0.17	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
30	0	I	0	0		0	0	0	0	0	0	0
31	0		0	0		0.02		0		2.4	0	
31	0		0	0		0		0		0.02	0	

\* I represents ice present.

**E229.3 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0.01	0.69	0.01	0	0.71
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0.02	0	0	0.02	0	0	0.31	11	0.27	0	11
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	9	0	0	0	0	0	0	0	0	0	0	9

### Pajarito Watershed

The Pajarito Canyon watershed is located in the central portion of LANL and is approximately 13.6 mi<sup>2</sup> 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, Twomile and Threemile Canyons, intersect Pajarito Canyon on LANL property. The watershed reaches the Rio Grande at an elevation of approximately 5410 ft. Twomile Canyon heads in the Sierra de los Valles and has a length of approximately 5 mi and a drainage area of 3.1 mi<sup>2</sup>, 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 Twomile and Threemile Canyons contain ephemeral and intermittent streams. Seasonal springs in Twomile Canyon and perennial springs in Threemile Canyon support short reaches of ephemeral and perennial flow, respectively. East of the confluence with Threemile 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 Threemile Canyon. In 2012 and 2013, there was minimal to no snowmelt runoff. 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 gage stations within the Pajarito watershed. E245.5 received the most discharge during the July/August monsoon months.

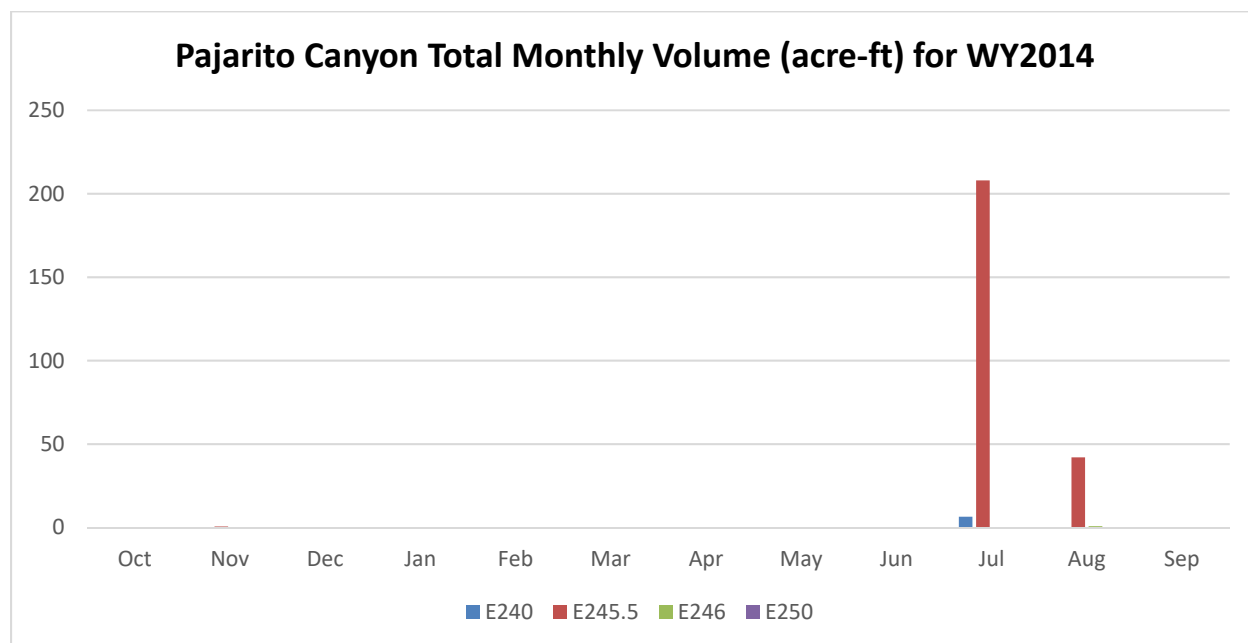


Figure 6 Total monthly volume (acre-ft) for WY2014 for Pajarito Canyon



**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<sup>2</sup>.

**Period of Record.** October 1993 to June 28, 2000 (destroyed by flood); April 2001 to September 30, 2014.

**Revised Record.** WDR 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.** 3 yr, 18 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 141 ft<sup>3</sup>/s, July 29, 2014, gage height 2.27 ft.



**E240 Stream gage downstream 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. 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 two ISCO pump samplers 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.

The station is also equipped with a rain gage, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
23	8	8	3	n/a*	n/a

\* n/a = Not applicable.

**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 for April 6, 7, and 8, 2014; and September 16 and 17, 2014, when the equipment malfunctioned.

**Rating.** The gage 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 gage across the entire width of the channel with a 6-in. “V” notch for low water. Another gabion is 50 ft above the gage.

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. 3 using variable shift diagrams.

**E240 Daily Peak Discharge (ft<sup>3</sup>/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	0.09	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	0.05	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	E*	0	0	0	0	0
7	0	0	0	0	0	0	E	0	0	0.38	0	0
8	0	0	0	0	0	0	E	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	1.1	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	0.02	0	0
15	0	0	0	0	0	0	0	0	0	0	1.0	0
16	0	0	0	0	0	0	0	0	0	0	0	E
17	0	0	0	0	0	0	0	0	0	0	0	E
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	18	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	0.05	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0		0	0	0	0	141	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		24.3	0	

\* E represents equipment failure.

**E240 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0	0	0	0	0	0	0	0	0	6.5	0.03	0	6.5
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	141	1.0	0	141
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	3	0	0	3	4	2	5

### **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<sup>2</sup>.

**Period of Record.** October 1, 2002, to September 30, 2014.

**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.** 3 yr, 226 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 424 ft<sup>3</sup>/s, July 31, 2014, gage height 3.98 ft.



**E245.5 Stream gage 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. 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, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
23	12	11	9	n/a*	n/a

\* n/a = Not applicable.

**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 14, 2013, through January 14, 2014; February 6–13, 2014; and March 3–15, 2014, when the gage was affected by ice and March 16, 2014, through May 1, 2014, when the equipment malfunctioned.

**Rating.** The channel is straight for 80 ft above and below the gage. 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.

**Daily Peak Discharge (ft<sup>3</sup>/s) for E245.5**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	I <sup>a</sup>	I	0	0	E <sup>b</sup>	E	0	0	58	0
2	0	0.01	I	I	0	0	E	0	0	0	0.05	0
3	0	0.01	I	I	0	I	E	0	0	0	0	0
4	0	0	I	I	0	I	E	0	0	0	178	0
5	0	0.37	I	I	0	I	E	0	0	0	104	0
6	0	0.05	I	I	I	I	E	0	0	0	0.01	0
7	0	0	I	I	I	I	E	0	0	371	0.01	0
8	0	0	I	I	I	I	E	0	0	153	0	0
9	0	0	I	I	I	I	E	0	0	1.4	0	0
10	0	0	I	I	I	I	E	0	0	0	48	0
11	0	0	I	I	I	I	E	0	0	0	0	0
12	0	0.15	I	I	I	I	E	0	0	0	0	0
13	0	0	I	I	I	I	E	0	0	0	0	0
14	0	I	I	I	0	I	E	0	0	0	0	0
15	0	I	I	0	0	I	E	0	0	339	0	0
16	0	I	I	0	0	E	E	0	0	23	0	0
17	0	I	I	0	0	E	E	0	0	0	0	0
18	0	I	I	0	0	E	E	0	0	0	0	0
19	0	I	I	0	0	E	E	0	0	89	0	0
20	0	I	I	0	0	E	E	0	0	0	0	0
21	0	I	I	0	0	E	E	0	0	0	0	0
22	0	I	I	0	0	E	E	0	0	0	0	0
23	0	I	I	0	0	E	E	0	0	0	0	0
24	0	I	I	0	0	E	E	0	0	0	0	0
25	0	I	I	0	0	E	E	0	0	0	0	0
26	0	I	I	0	0	E	E	0	0	0	0	0
27	0	I	I	0	0	E	E	0	0	34	0	0
28	0.01	I	I	0	0	E	E	0	0	16	0	0
29	0.03	I	I	0		E	E	0	0	328	0	0
30	0.01	I	I	0		E	E	0	0	0.07	0	0
31	0		I	0		E		0		424	0	

<sup>a</sup> I represents ice present.

<sup>b</sup> E represents equipment failure.

**E245.5 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	0.06	0.59	I*	0	0	0	0	0	0	208	42	0	250
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0.03	0.15	I	0	0	0	0	0	0	424	178	0	424
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	17	31	14	8	29	30	0	0	0	0	0	129

\* I represents ice present.

**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<sup>2</sup>.

**Period of Record.** October 1998 to September 30, 2013.

**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.** 3 yr, 9 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 5.4 ft<sup>3</sup>/s, August 4, 2014, gage height 1.48 ft.



**E246 Stream gage 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 mounted on a 9-in. Parshall flume. 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
15	7	6	2	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside staff gage gave a complete and satisfactory record, except for October 1, 2014, through November 14, 2013, because of equipment malfunction, and November 23, 2013, through December 1, 2013, when the gage was affected by ice.

**Rating.** The channel is straight above and below the gage. 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<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	E <sup>a</sup>	E	I <sup>b</sup>	0	0	0	0	0	0	0	0	0
2	E	E	0	0	0	0	0	0	0	0	0	0
3	E	E	0	0	0	0	0	0	0	0	0	0
4	E	E	0	0	0	0	0	0	0	0	5.4	0
5	E	E	0	0	0	0	0	0	0	0	2.4	0
6	E	E	0	0	0	0	0	0	0	0	0	0
7	E	E	0	0	0	0	0	0	0	0	0	0
8	E	E	0	0	0	0	0	0	0	0	0	0
9	E	E	0	0	0	0	0	0	0	0	0	0
10	E	E	0	0	0	0	0	0	0	0	0	0
11	E	E	0	0	0	0	0	0	0	0	0	0
12	E	E	0	0	0	0	0	0	0	0	0	0
13	E	E	0	0	0	0	0	0	0	0	0	0
14	E	E	0	0	0	0	0	0	0	0	0	0
15	E	0	0	0	0	0	0	0	0	0	0	0
16	E	0	0	0	0	0	0	0	0	0	0	0
17	E	0	0	0	0	0	0	0	0	0	0	0
18	E	0	0	0	0	0	0	0	0	0	0	0
19	E	0	0	0	0	0	0	0	0	0	0	0
20	E	0	0	0	0	0	0	0	0	0	0	0
21	E	0	0	0	0	0	0	0	0	0	0	0
22	E	0	0	0	0	0	0	0	0	0	0	0
23	E	I	0	0	0	0	0	0	0	0	0	0
24	E	I	0	0	0	0	0	0	0	0	0	0
25	E	I	0	0	0	0	0	0	0	0	0	0
26	E	I	0	0	0	0	0	0	0	0	0	0
27	E	I	0	0	0	0	0	0	0	0	0	0
28	E	I	0	0	0	0	0	0	0	0	0	0
29	E	I	0	0		0	0	0	0	0	0	0
30	E	I	0	0		0	0	0	0	0	0	0
31	E		0	0		0		0		0.14	0	

<sup>a</sup> E represents equipment failure.

<sup>b</sup> I represents ice present.

**E246 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	0	0	0	0	0	0	0	0	0.01	0.86	0	0.87
<b>Max Daily Peak (acre-ft)</b>	E	0	0	0	0	0	0	0	0	0.14	5.4	0	5.4
<b>Min Daily Peak (acre-ft)</b>	E	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	22	1	0	0	0	0	0	0	0	0	0	54

\* E represents equipment failure.

### **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<sup>2</sup>.

**Period of Record.** November 1993 to August 25, 2006 (destroyed by flood); September 2006 to September 13, 2013 (damaged by high-flow event).

**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.** 3 yr, 158 acre-ft/yr. Water Year 2014 not included.

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

**Maximum Discharge for Current Water Year.** Not available.



**E250 Stream gage 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.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
14	5	5	2	n/a*	n/a

\* n/a = Not applicable.

**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 was broken for the entire water year.

**Rating.** The channel is straight for 50 ft above and 100 ft below the gage. 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<sup>3</sup>/s)**

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

\* E represents equipment failure.

**E250 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	E	E	E	E	E	E	E	E	E	E	E	E
<b>Max Daily Peak (acre-ft)</b>	E	E	E	E	E	E	E	E	E	E	E	E	E
<b>Min Daily (acre-ft)</b>	E	E	E	E	E	E	E	E	E	E	E	E	E
<b>Missing Days</b>	31	30	31	31	28	31	30	31	30	31	31	30	365

\* E represents equipment failure.

## Water/Cañon de Valle Watershed

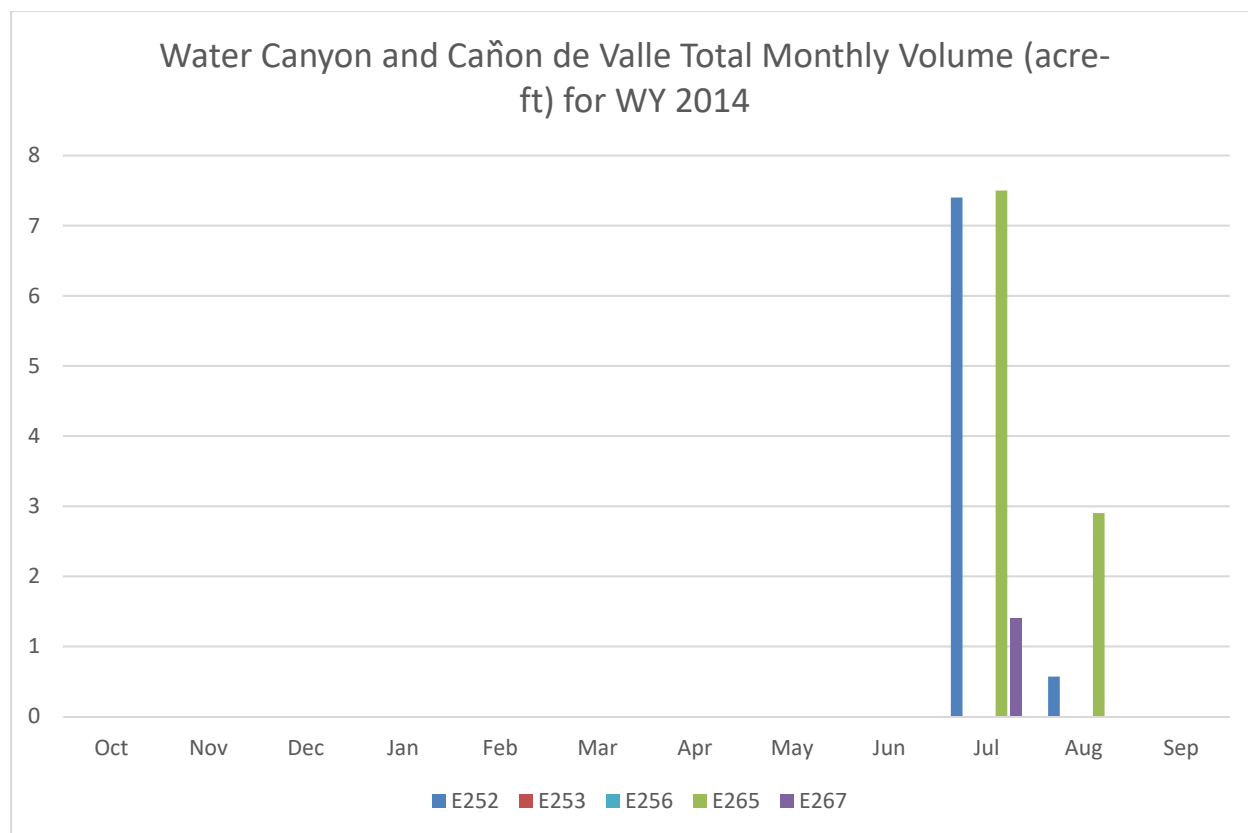
The Water Canyon/Cañon de Valle watershed is an east-to-southeast trending drainage that originates on the eastern slopes of the Sierra de los Valles in the Valles Caldera National Preserve at an elevation of 10,380 ft. The watershed remains on the Valles Caldera National Preserve for 0.4 mi, and then 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<sup>2</sup>. Several perennial springs are located in the upper reaches of Water Canyon and Cañon de Valle (the major subdrainage to Water Canyon). 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<sup>2</sup>. 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 gage discharge stations within the Water Canyon and Cañon de Valle watershed. Stream gages E252, E256, E265, and E267 received discharge during July; gages E252, E256, and E265 received discharge in August. Stream gage E253 did not receive any discharge for the 2014 water year.



**Figure 7** Total monthly volume (acre-ft) for WY2014 in Water Canyon, Cañon de Valle, and Fence Canyon. Note: Stream gage E253 did not receive any discharge in WY2014, and the maximum discharge in WY2014 for stream gage E256, <1 ft<sup>3</sup>/s, is too low to display on the plot.

**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<sup>2</sup>.

**Period of Record.** October 1994 to June 2000 (destroyed by flood); April 2001 to September 2014

**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.** 3 yr, 31 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 21 ft<sup>3</sup>/s, July 19, 2014, gage height 5.24 ft.



**E252 Stream gage 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 (5-min interval). 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
17	5	5	2	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None. Levels were run when the gage was established on April 16, 2001. The new gage is at the same datum as the old and is about 20 ft upstream.

**Gage-Height Record.** The data logger referenced to the inside staff gage and reference point gave a complete and satisfactory record for the year, except for October 1, 2013, through November 18, 2014; August 17, 24, 30, and 31, 2014; and September 2, 2014, when the equipment malfunctioned.

**Rating.** The channel at the gage is 30 ft wide and straight for about 40 ft upstream, then bends to the left; downstream the gage 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 gage. 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 gage reach and throughout the region cause considerable movement of material as either scours or fills.

No discharge measurements were made during the year.

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



**E252 Daily Peak Discharge (ft<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	E*	E	0	0	0	0	0	0	0	0	1.2	0
2	E	E	0	0	E	0	0	0	0	0	0.04	E
3	E	E	0	0	0	0	0	0	0	0	0.04	0
4	E	E	0	0	0	0	0	0	0	0	0.04	0
5	E	E	0	0	0	0	0	0	0	0	0.04	0
6	E	E	0	0	0	0	0	0	0	0	0	0
7	E	E	0	0	0	0	0	0	0	0	0	0
8	E	E	0	0	0	0	0	0	0	0	0	0
9	E	E	0	0	0	0	0	0	0	0	0	0
10	E	E	0	0	0	0	0	0	0	0	0	0
11	E	E	0	0	0	0	0	0	0	0	0	0
12	E	E	0	0	0	0	0	0	0	0	0	0
13	E	E	0	0	0	0	0	0	0	0	0	0
14	E	E	0	0	0	0	0	0	0	0	0	0
15	E	E	0	0	0	0	0	0	0	0	0	0
16	E	E	0	0	0	0	0	0	0	0	0	0
17	E	E	0	0	0	0	0	0	0	0	E	0
18	E	E	0	0	0	0	0	0	0	0	0	0
19	E	0	0	0	0	0	0	0	0	21	0	0
20	E	0	0	0	0	0	0	0	0	0.16	0	0
21	E	0	0	0	0	0	0	0	0	0	0	0
22	E	0	0	0	0	0	0	0	0	0	0	0
23	E	0	0	0	0	0	0	0	0	0.01	0	0
24	E	0	0	0	0	0	0	0	0	0.23	E	0
25	E	0	0	0	0	0	0	0	0	0.5	0	0
26	E	0	0	0	0	0	0	0	0	0.55	0	0
27	E	0	0	0	0	0	0	0	0	0.26	0	0
28	E	0	0	0	0	0	0	0	0	0.17	0	0
29	E	0	0	0		0	0	0	0	0.05	0	0
30	E	0	0	0		0	0	0	0	0.03	E	0
31	E		0	0		0		0		7.2	E	

\* E represents equipment failure.

**E252 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	0	0	0	0	0	0	0	0	7.4	0.57	0	7.97
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	21	1.2	0	21
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	18	0	0	1	0	0	0	0	0	4	1	55

\* E represents equipment failure.

**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<sup>2</sup>.

**Period of Record.** October 1994 to June 2000 (gage destroyed by flood); January 31, 2001, to September 30, 2014.

**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.** 3 yr, 94 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 0 ft<sup>3</sup>/s, multiple days.



**E253 Stream gage 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, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
18	5	5	1	n/a*	n/a

\* n/a = Not applicable.

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

**Gage-Height Record.** Stream gage E253 did not receive any discharge for the 2014 water year.

**Rating.** The channel at the gage 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<sup>3</sup>/s)**

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

\* E represents equipment failure.

**E253 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	E*	0	0	0	0	0	0	0	0	0	0	0	0
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	0	0	0	0
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	8	0	0	1	0	0	0	0	0	4	1	45

\* E represents equipment failure.

**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<sup>2</sup>.

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

**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.** <1 yr, 0.01 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, <1 ft<sup>3</sup>/s, August 15, 2014, gage height 0.23 ft.



**E256 Stream gage 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
4	7	4	3	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the inside staff gage gave a complete and satisfactory record from August 15, 2014, to September 20, 2014. The gage station was not in operation from August 21, 2011, to August 14, 2014.

**Rating.** The channel is straight for 50 ft upstream and 20 ft downstream from the gage. The streambed consists of sand with gravel and is subject to filling behind the flume from flow events and gage 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.

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

E256 Daily Peak Discharge (ft<sup>3</sup>/s)

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

\* IA represents inactive gage. Gage was returned to service August 16.

## E256 Monthly Summary Table

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total Volume (acre-ft)</b>	IA*	IA	IA	IA	IA	IA	IA	IA	IA	IA	0.01	0	0.01
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0.06	0.02	0.06
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	0	0	0
<b>Missing Days</b>	31	30	31	31	28	31	30	31	30	31	14	0	318

\* IA represents inactive gage. Gage was returned to service August 16.

### **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<sup>2</sup>.

**Period of Record.** October 1993 to September 30, 2014.

**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.** 3 yr, 83 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 52 ft<sup>3</sup>/s, July 31, 2014, gage height 1.75 ft.



**E265 Stream gage 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. The station is equipped with two ISCO pump samplers to collect water-quality samples. The ISCO samplers are housed in a separate shelter, a 3- × 4-in. 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 measurements above the wading stage.

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

### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
20	8	6	3	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

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

**Rating.** The channel is straight for 100 ft above and below the gage. 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<sup>3</sup>/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	3.3	0
2	0	0	0	0	E	0	0	0	0	0	0	E
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	28	0
5	0	0	0	0	0	0	0	0	0	0	0.05	0
6	0	E*	0	0	0	0	0	0	0	0	0	0
7	0	E	0	0	0	0	0	0	0	0	0	0
8	0	E	0	0	0	0	0	0	0	0	0	0
9	0	E	0	0	0	0	0	0	0	0	0	0
10	0	E	0	0	0	0	0	0	0	0	0	0
11	0	E	0	0	0	0	0	0	0	0	0	0
12	0	E	0	0	0	0	0	0	0	0	0	0
13	0	E	0	0	0	0	0	0	0	0	0	0
14	0	E	0	0	0	0	0	0	0	0	0	0
15	0	E	0	0	0	0	0	0	0	0	0	0
16	0	E	0	0	0	0	0	0	0	0	0	0
17	0	E	0	0	0	E	0	0	0	0	E	0
18	0	E	0	0	0	E	0	0	0	0	0	0
19	0	E	0	0	0	E	0	0	0	0	0	0
20	0	E	0	0	0	E	0	0	0	0	0	0
21	0	E	0	0	0	E	0	0	0	0	0	0
22	0	E	0	0	0	E	0	0	0	0	0	0
23	0	0	0	0	0	E	0	0	0	0	0	0
24	0	0	0	0	0	E	0	0	0	0	E	0
25	0	0	0	0	0	E	0	0	0	0	0	0
26	0	0	0	0	0	E	0	0	0	0	0	0
27	0	0	0	0	0	E	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
30	0	0	0	0		0	0	0	0	0	E	0
31	0		0	0		0		0		52	E	

\* E represents equipment failure,

**E265 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	0	0	0	0	0	0	0	0	0	7.5	2.9	0	10.4
<b>Max Daily Mean (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	52	28	0	52
<b>Min Daily Mean (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	17	0	0	1	11	0	0	0	0	4	1	34

**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<sup>2</sup>.

**Period of Record.** October 1, 1995, to September 30, 2014

**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.** 3 yr, 2 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 25 ft<sup>3</sup>/s, July 2, 2014, gage height 2.12 ft.



**E267 Stream gage 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-x 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.

**Fieldwork**

Stream Gage Inspection	Stream Gage Maintenance	ISCO 12-Count Sampler Inspection	ISCO 12-Count Sampler Maintenance	ISCO 24-Count Sampler Inspection	ISCO 24-Count Sampler Maintenance	Number of Samples Collected
12	5	6	3	n/a*	n/a	0

\* n/a = Not applicable.

**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 for October 1, 2013, through November 15, 2013; February 2–14, 2014; May 2–7, 2014; July 8–10, 2014; August 24 and 30–31, 2014; and September 2, 2014, when the equipment malfunctioned.

**Rating.** The channel is fairly straight for 300 ft above the gage and 150 ft below. The streambed is mostly sand. The brush is fairly thick along the stream bank. The control is a concrete broad-crested weir.

Rating No. 2 is considered good.

The original shape and definition of the rating was derived by computation using weir geometry with the slope area 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<sup>3</sup>/s)**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	E*	E	0	0	0	0	0	0	0	0	0	0
2	E	E	0	0	E	0	0	E	0	25	0	E
3	E	E	0	0	0	0	0	E	0	0	0	0
4	E	E	0	0	0	0	0	E	0	0	0	0
5	E	E	0	0	0	0	0	E	0	0	0	0
6	E	E	0	0	0	0	0	E	0	0	0	0
7	E	E	0	0	0	0	0	E	0	0	0	0
8	E	E	0	0	0	0	0	0	0	E	0	0
9	E	E	0	0	0	0	0	0	0	E	0	0
10	E	E	0	0	0	0	0	0	0	E	0	0
11	E	E	0	0	0	0	0	0	0	0	0	0
12	E	E	0	0	0	0	0	0	0	0	0	0
13	E	E	0	0	0	0	0	0	0	0	0	0
14	E	E	0	0	0	0	0	0	0	0	0	0
15	E	E	0	0	0	0	0	0	0	0	0	0
16	E	0	0	0	0	0	0	0	0	0	0	0
17	E	0	0	0	0	0	0	0	0	0	E	0
18	E	0	0	0	0	0	0	0	0	0	0	0
19	E	0	0	0	0	0	0	0	0	0	0	0
20	E	0	0	0	0	0	0	0	0	0	0	0
21	E	0	0	0	0	0	0	0	0	0	0	0
22	E	0	0	0	0	0	0	0	0	0	0	0
23	E	0	0	0	0	0	0	0	0	0	0	0
24	E	0	0	0	0	0	0	0	0	0	E	0
25	E	0	0	0	0	0	0	0	0	0	0	0
26	E	0	0	0	0	0	0	0	0	0	0	0
27	E	0	0	0	0	0	0	0	0	0	0	0
28	E	0	0	0	0	0	0	0	0	0	0	0
29	E	0	0	0		0	0	0	0	0.83	0	0
30	E	0	0	0		0	0	0	0	0	E	0
31	E		0	0		0		0		3.8	E	

\* E represents equipment failure.

**E267 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	E*	0	0	0	0	0	0	0	0	1.4	0	0	1.4
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	25	0	0	25
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	E	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	31	15	0	0	1	0	0	6	0	3	4	1	17

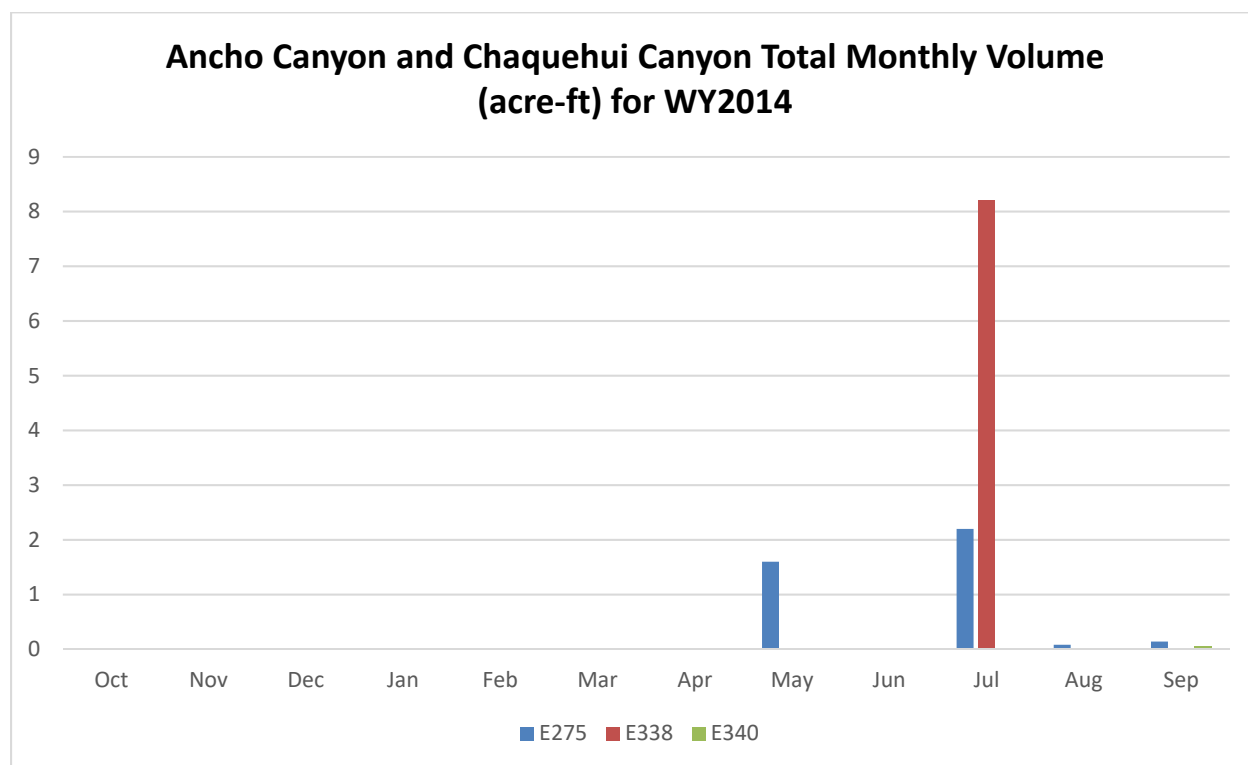
\* E represents equipment failure.

### 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<sup>2</sup>, 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<sup>2</sup>. Stream flow in Chaquehui Canyon is ephemeral.

Figure 8 shows the total monthly volume of discharge for the three stream gage discharge stations within the Ancho Canyon and Chaquehui Canyon watersheds. Stream gages E275 and E338 received discharge during July. Stream gage E340 received discharge only during September.



**Figure 8** Total monthly volume (acre-ft) for WY2014 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<sup>2</sup>.

**Period of Record.** December 1993 to September 30, 2014.

**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.** 3 yr, 72 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge, 74 ft<sup>3</sup>/s, July, 29, 2014, gage height 1.76 ft.



**E275 Stream gage 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. 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.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
14	7	17	3	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the outside gage gave a complete and satisfactory record, except for February 2, 2014; August 17, 24, 30, and 31, 2014; and September 2, 2014, when the equipment malfunctioned.

**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 gage becomes supercritical as the fall increases radically below the station. A channel a quarter-mile upstream has very low banks and may spread out to large widths. The channel contracts markedly from there to the gage. The control is a natural rock outcrop stabilized by concrete.

Rating No. 1 was developed from the PZF and 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.



**E275 Daily Peak Discharge (ft<sup>3</sup>/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	E*	0	0	0	0	0	0	E
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	1.5	0
5	0	0	0	0	0	0	0	0	0	0	0	5.7
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	0.81	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	E	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	23	0	0
24	0	0	0	0	0	0	0	0	0	0	E	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	74	0	3.0
30	0	0	0	0		0	0	0	0	0	E	0
31	0		0	0		0		0		0	E	

\* E represents equipment failure.

**E275 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	0	0	0	0	0	0	0	1.6	0	2.2	0.08	0.14	4
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0.81	0	74	1.5	5.7	74
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	2	1	3

### 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<sup>2</sup>.

**Period of Record.** October 1, 1999, to January 8, 2001; October 4, 2001, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 2 yr, 20 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge 179 ft<sup>3</sup>/s, July 23, 2014, gage height 2.7 ft.



**E338 Stream gage downstream view**

**Equipment.** The station is equipped with a Sutron 9210 data logger (5-min interval) and a Milltronics sonic probe. The system is powered by a solar-panel battery system housed in a NEMA shelter. The station is equipped with two ISCO samplers (one 12-count 1-L glass and 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 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 measurements above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

#### Fieldwork

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
14	6	8	6	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the inside staff gage gave a complete and satisfactory record for the entire year.

**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<sup>3</sup>/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	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	179	0	0
24	0	0	0	0	0	0	0	0	0	1.1	0	0
25	0	0	0	0	0	0	0	0	0	1.3	0	0
26	0	0	0	0	0	0	0	0	0	1.1	0	0
27	0	0	0	0	0	0	0	0	0	1.3	0	0
28	0	0	0	0	0	0	0	0	0	0.73	0	0
29	0	0	0	0		0	0	0	0	20	0	0
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

**E338 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	0	0	0	0	0	0	0	0	0	8.2	0	0	8.2
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	179	0	0	179
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

**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<sup>2</sup>.

**Period of Record.** February 7, 2001, to October 14, 2003; May 14, 2004, to September 30, 2014.

**Revised Record.** None.

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

**Average Volume.** 2 yr, 4 acre-ft/yr.

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

**Maximum Discharge for Current Water Year.** Maximum discharge 4.2 ft<sup>3</sup>/s, September 5, 2014, gage height 0.48 ft.



**E340 Stream gage, 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 two ISCO samplers (one 12-count 1-L glass and 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 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 measurements above the wading stage. All high-flow measurements will be by slope-area or critical-depth computation methods.

**Fieldwork**

Number of Stream Gage Inspections	Number of Stream Gage Maintenance Visits	Number of ISCO 12-Count Sampler Inspections	Number of ISCO 12-Count Sampler Maintenance Visits	Number of ISCO 24-Count Sampler Inspections	Number of ISCO 24-Count Sampler Maintenance Visits
12	3	6	2	n/a*	n/a

\* n/a = Not applicable.

**Datum Correction.** None.

**Gage-Height Record.** The data logger referenced to the inside staff gage gave a complete and satisfactory record for the year.

**Rating.** The channel zigzags downgrade while dropping off low bedrock shelves into sandy bottoms both above and below the gage 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<sup>3</sup>/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	4.2
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
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0	0	

**E340 Monthly Summary Table**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY
<b>Total (acre-ft)</b>	0	0	0	0	0	0	0	0	0	0	0	0.06	0.06
<b>Max Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	4.2	4.2
<b>Min Daily Peak (ft<sup>3</sup>/s)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

## PRECIPITATION GAGE STATIONS

### Data Collection and Computation

A complete record at a precipitation gage station consists of precipitation measurements directly observed using a tipping bucket. Five-minute records of precipitation were 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 gage station:

- Station analysis summary with photo when available
- Data table for the water year (October 1, 2013, to September 30, 2014)

The station analysis supplements each daily values table and includes a description of gage location, the period of record, gage 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.

**Fieldwork:** Totals are presented for rain gage inspections and rain gage maintenance performed by field crews during the water year.

**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-h local standard time.



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

The monthly total precipitation table records the total monthly precipitation from October 2013 to October 2014. 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, 2014. 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 rain gage. The column titled “Total Precipitation” contains the sum of the daily precipitation for this period for each precipitation gage.

#### Precipitation Summary for Monsoon Season, May 1, 2013–September 30, 2014

Rain Gage	Days with Rain	Total Precipitation (in.)	Maximum Daily Total Precipitation (in.)	Elevation (ft)
E038	48	10.35	0.98	7087
E042.1	45	9.64	1.14	6379
R055.5	54	13.51	1.37	7102
E121.9	51	13.66	1.34	7336
E200.5	53	10.85	0.83	7214
E203	55	12.55	1.0	6817
E240	55	12.74	1.3	7719
E245.5	55	12.13	0.9	6796
E253	55	11.87	1.06	7719
E257	54	14.38	1.8	7360
E262.4	52	16.65	1.09	7124
E265	53	11.33	0.95	6311
E267.4	50	13.74	0.89	6865
E340	49	11.49	0.98	6423
TA-6	53	18.88	1.46	7423
TA-49	42	15.76	0.92	7045
TA-53	32	9.25	0.96	6992
TA-54	41	10.53	1.46	6553
North Community	45	11.87	0.59	7414

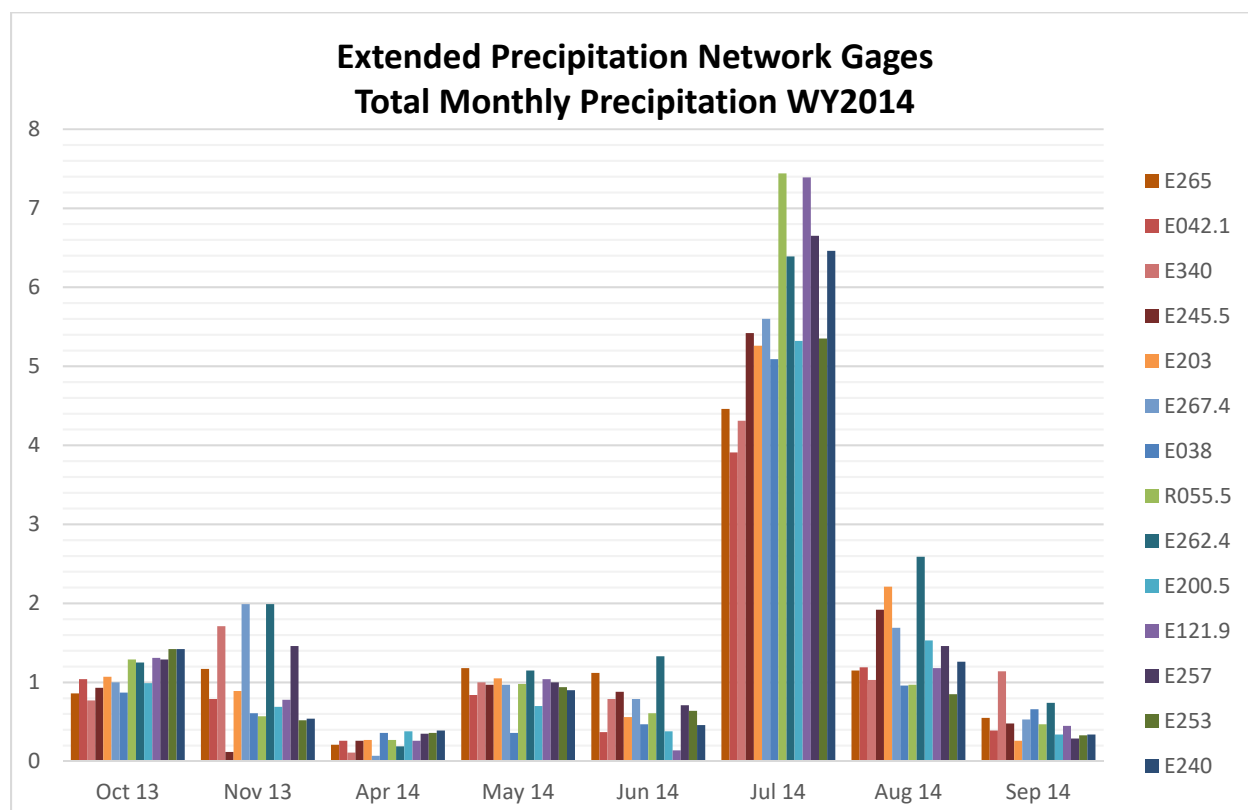
#### Extended Precipitation Network

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 Compliance Order on Consent 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 gage stations located within the LANL boundary. The gages collect 5-min precipitation data in tipping buckets. The network is active from April to November when precipitation is most likely to occur on the Pajarito Plateau. Each precipitation gage station is named after its collocated or formerly collocated stream gage station per the USGS Water Resources Division’s naming convention previously described in the stream discharge gage station section of this report.

Figure 9 shows the total monthly precipitation for the 14 extended network gages from October 2013 to September 2014, with December 2013 to March 2014 omitted because the gages were shut down for winter.



Note: The gages are listed in ascending order, from lowest elevation (E265 at 6311 ft) to highest elevation (E240 at 7719 ft).

**Figure 9 Total monthly precipitation for the extended precipitation network gages for WY2014, excluding December 2013 to March 2014, when the gages 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, 2014.

**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.** 0.98 in. on July 15, 2014.

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

**Fieldwork.** The station was visited 26 times to perform inspections and 9 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 7, 2013, to March 13, 2014, when the gage was shut down for winter.



**E038 Precipitation gage**

## Daily Total Precipitation (in.) for E038

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IAa	IA	IA	IA	0	0	0	0	0.15	0
2	0	0	IA	IA	IA	IA	0	0	0	0.14	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.58	IA	IA	IA	IA	0	0	0	0.05	0.32	0
5	0	0.03	IA	IA	IA	IA	0.02 S	0	0	0.01	0.14	0.37
6	0	0	IA	IA	IA	IA	0.24 S	0	0	0	0	0
7	0	IA	IA	IA	IA	IA	0.01 S	0	0.23	0.01	0	0
8	0	IA	IA	IA	IA	IA	0	0	0	0.52	0	0
9	0	IA	IA	IA	IA	IA	0	0	0	0.06	0	0
10	0.12	IA	IA	IA	IA	IA	0	0	0	0	0.08	0
11	0	IA	IA	IA	IA	IA	0	0	0	0.03	0.01	0
12	0	IA	IA	IA	IA	IA	0	0	0	0	0	0.01
13	0.15 S <sup>b</sup>	IA	IA	IA	IA	IA	0.01	0.01	0.04	0	0.01	0
14	0	IA	IA	IA	IA	0.06	0.03 S	0	0	0.69	0	0
15	0.14 S	IA	IA	IA	IA	0.04	0	0	0	0.98	0.02	0
16	0.05 S	IA	IA	IA	IA	0	0	0	0	0.24	0	0
17	0	IA	IA	IA	IA	0	0	0	0	0.02	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.03	0	0	0.17	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.12	0	0
21	0	IA	IA	IA	IA	0	0	0	0.2	0.03	0.01	0
22	0	IA	IA	IA	IA	0	0	0.26	0	0	0.09	0.07
23	0	IA	IA	IA	IA	0	0	0.31	0	0	0	0
24	0.35	IA	IA	IA	IA	0	0	0.12	0	0	0	0
25	0.02	IA	IA	IA	IA	0.03	0	0.14	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.06	0.13	0
27	0	IA	IA	IA	IA	0	0.01	0	0	0.39	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.13	0	0
29	0.01	IA	IA	IA		0	0	0.01	0	0.57	0	0.21
30	0.03	IA	IA	IA		0	0	0	0	0	0	0
31	0		IA	IA		0		0		0.86	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E038, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.87	0.61 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.13 <sup>a</sup>	0.36	0.85	0.47	5.09	0.96	0.66
<b>Mean Total for Period of Record (in.)</b>	1.33	n/a <sup>c</sup>	n/a	n/a	n/a	n/a	0.70	1.0	0.25	2.55	2.40	1.80
<b>Max Daily Total (in.)</b>	0.35	0.58	IA	IA	IA	0.06	0.24S <sup>d</sup>	0.31	0.23	0.98	0.32	0.37
<b>Missing Days</b>	0	24	31	31	28	13	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents inactive gage during seasonal shutdown.

<sup>c</sup> n/a = Not applicable.

<sup>d</sup> S represents precipitation as snow.

**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, 2014.

**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.** 1.14 in. on July 14, 2014.

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

**Fieldwork.** The station was visited 33 times to perform inspections and 12 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 6, 2013, to February 11, 2014, when the gage was shut down for winter.



**E042.1 Precipitation gage**

## Daily Total Precipitation (in.) for E042.1

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.01	0.09	0
2	0	0	IA	IA	IA	IA	0	0	0	0.29	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.78	IA	IA	IA	IA	0	0	0	0.01	0.21	0
5	0	0.01	IA	IA	IA	IA	0.05S <sup>b</sup>	0	0	0	0.12	0.06
6	0	IA	IA	IA	IA	IA	0.1S	0	0	0	0	0
7	0	IA	IA	IA	IA	IA	0.01S	0	0.17	0	0	0
8	0	IA	IA	IA	IA	IA	0	0	0	0.64	0	0
9	0	IA	IA	IA	IA	IA	0	0	0	0.02	0	0
10	0.24	IA	IA	IA	IA	IA	0	0	0	0	0.29	0
11	0	IA	IA	IA	IA	IA	0	0	0	0	0	0
12	0.01	IA	IA	IA	IA	IA	0	0.02	0	0	0	0
13	0.06S	IA	IA	IA	IA	IA	0	0	0.06	0.01	0.02	0
14	0	IA	IA	IA	IA	0.04	0.03S	0	0	1.14	0	0
15	0.24S	IA	IA	IA	IA	0.03	0	0	0	0.69	0	0.04
16	0	IA	IA	IA	IA	0	0	0	0	0.1	0	0
17	0	IA	IA	IA	IA	0	0	0	0	0	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.06	0	0	0.07	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.04	0	0.02
21	0	IA	IA	IA	IA	0	0	0	0.14	0.09	0.04	0
22	0	IA	IA	IA	IA	0	0	0.42	0	0	0.09	0.04
23	0	IA	IA	IA	IA	0	0	0.16	0	0	0	0
24	0.28	IA	IA	IA	IA	0	0	0.16	0	0	0	0
25	0.02	IA	IA	IA	IA	0.03	0	0.05	0	0	0	0
26	0	IA	IA	IA	IA	0.01S	0	0	0	0	0.33	0
27	0	IA	IA	IA	IA	0	0	0	0	0.08	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.07	0	0
29	0.01S	IA	IA	IA		0	0	0.03	0	0.05	0	0.23
30	0.14S	IA	IA	IA		0	0	0	0	0	0	0
31	0.04		IA	IA		0		0		0.6	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E042.1, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.04	0.79 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.11 <sup>a</sup>	0.26	0.84	0.37	3.91	1.19	0.39
<b>Mean Total for Period of Record (in.)</b>	0.93	n/a <sup>c</sup>	n/a	n/a	n/a	n/a	0.44	0.47	0.54	2.03	2.19	1.37
<b>Max Daily Total (in.)</b>	0.28	0.78	IA	IA	IA	0.04	0.06	0.42	0.17	1.14	0.33	0.23
<b>Missing Days</b>	0	25	31	31	11	0	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents inactive gage during seasonal shutdown.

<sup>c</sup> n/a = Not applicable.

**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, 2014.

**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.** 1.37 in. on July 29, 2014.

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

**Fieldwork.** The station was visited 26 times to perform inspections and 4 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 6, 2013, to March 17, 2014, when the gage was shut down for winter.



**R055.5 Precipitation gage**

## Daily Total Precipitation (in.) for R055.5

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.01	0.19	0
2	0	0	IA	IA	IA	IA	0	0	0	0.06	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0.01	0
4	0	0.57	IA	IA	IA	IA	0	0	0	0.05	0.38	0.03
5	0	0	IA	IA	IA	IA	0	0	0	0.01	0.1	0.17
6	0	IA	IA	IA	IA	IA	0.07S <sup>b</sup>	0	0	0	0	0
7	0	IA	IA	IA	IA	IA	0.01	0	0.21	0.4	0	0
8	0	IA	IA	IA	IA	IA	0	0	0	1.09	0	0
9	0.01	IA	IA	IA	IA	IA	0	0	0	0.04	0	0
10	0.28	IA	IA	IA	IA	IA	0	0	0	0	0	0
11	0	IA	IA	IA	IA	IA	0	0	0	0.03	0	0
12	0.01	IA	IA	IA	IA	IA	0	0.01	0	0	0	0.01
13	0.15S	IA	IA	IA	IA	IA	0.07	0.02	0.11	0.02	0.02	0
14	0	IA	IA	IA	IA	IA	0.02S	0	0	0.83	0	0
15	0.22S	IA	IA	IA	IA	IA	0	0	0	0.88	0.06	0
16	0.19S	IA	IA	IA	IA	IA	0	0	0	0.17	0	0
17	0	IA	IA	IA	IA	IA	0	0	0.04	0.06	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.04	0	0	0.38	0	0
20	0	IA	IA	IA	IA	0	0.02	0	0	0.14	0	0
21	0	IA	IA	IA	IA	0	0	0	0.25	0.03	0	0
22	0	IA	IA	IA	IA	0	0	0.21	0	0.01	0.11	0.06
23	0	IA	IA	IA	IA	0	0	0.35	0	0	0	0.01
24	0.34	IA	IA	IA	IA	0	0	0.22	0	0	0	0
25	0.01	IA	IA	IA	IA	0.03	0	0.15	0	0	0	0.01
26	0	IA	IA	IA	IA	0.01S	0.01	0.01	0	0.1	0.1	0
27	0	IA	IA	IA	IA	0.02S	0.03S	0	0	0.64	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.16	0	0
29	0.02S	IA	IA	IA		0	0	0	0	1.37	0	0.18
30	0.06S	IA	IA	IA		0	0	0.01	0	0	0	0
31	0		IA	IA		0		0		0.96	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for R055.5, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.29	0.57 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.06 <sup>a</sup>	0.27	0.98	0.61	7.44	0.97	0.47
<b>Mean Total for Period of Record (in.)</b>	1.55	0.23	IA	IA	IA	IA	1.16	1.03	0.91	3.17	2.26	2.18
<b>Max Daily Total (in.)</b>	0.34	0.57	IA	IA	IA	0.03	0.07S	0.35	0.25	1.37	0.38	0.18
<b>Missing Days</b>	0	25	31	31	28	17	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.<sup>b</sup> IA represents 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, 2014.

**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.** 1.34 in. on July 31, 2014.

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

**Fieldwork.** The station was visited 10 times to perform inspections and 2 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 18, 2013, to March 2, 2014, when the gage was shut down for winter.



**E121.9 Precipitation gage**

## Daily Total Precipitation (in.) for E121.9

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0	0.16	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0	0
3	0	0	IA	IA	IA	0	0	0	0	0	0	0
4	0	0.53	IA	IA	IA	0	0	0	0	0.04	0.39	0.04
5	0	0.01	IA	IA	IA	0	0	0	0	0	0.05	0.17
6	0	0	IA	IA	IA	0	0.04S <sup>b</sup>	0	0	0	0	0
7	0	0	IA	IA	IA	0	0	0	0.02	1.27	0	0
8	0	0	IA	IA	IA	0	0	0	0	1.33	0	0
9	0.01	0	IA	IA	IA	0	0	0	0	0.03	0	0
10	0.35	0	IA	IA	IA	0	0	0	0	0.04	0.04	0.01
11	0	0	IA	IA	IA	0	0	0	0	0.06	0	0
12	0	0	IA	IA	IA	0	0	0.02	0	0	0	0
13	0.12	0	IA	IA	IA	0	0.11	0.01	0.01	0.02	0.05	0
14	0.01S	0	IA	IA	IA	0.21	0.03S	0	0	0.7	0	0
15	0.21S	0.21	IA	IA	IA	0.02	0	0	0	0.63	0.28	0
16	0.21S	0.03	IA	IA	IA	0	0	0	0	0.14	0	0
17	0	0	IA	IA	IA	0	0	0	0.03	0.02	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0.00	0
19	0	IA	IA	IA	IA	0	0.02	0	0	0.41	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.03	0	0
21	0	IA	IA	IA	IA	0	0	0	0.08	0.04	0	0
22	0	IA	IA	IA	IA	0	0	0.21	0	0	0.11	0.05
23	0	IA	IA	IA	IA	0	0	0.36	0	0	0.01	0
24	0.29	IA	IA	IA	IA	0	0	0.28	0	0	0	0
25	0.01	IA	IA	IA	IA	0.04	0	0.14	0	0	0	0
26	0	IA	IA	IA	IA	0	0.03	0.02	0	E	0.09	0
27	0	IA	IA	IA	IA	0.01	0.02S	0	0	E	0	0
28	0	IA	IA	IA	IA	0	0	0	0	E	0	0.01
29	0.04S	IA	IA	IA		0	0	0	0	1.24	0	0.17
30	0.05S	IA	IA	IA		0	0	0	0.00	0.05	0	0
31	0.01		IA	IA		0		0		1.34	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E121.9, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.31	0.78 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.28 <sup>a</sup>	0.26	1.04	0.14	7.39 <sup>a</sup>	1.18	0.45
<b>Mean Total for Period of Record (in.)</b>	1.26	0.23	IA	IA	IA	IA	0.81	0.93	0.82	1.98	2.14	2.84
<b>Max Daily Total (in.)</b>	0.35	0.53	IA	IA	IA	0.21	0.11	0.36	0.08	1.34	0.39	0.17
<b>Missing Days</b>	0	13	31	21	28	2	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents 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 2014.

**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.** 0.83 in. on July 15, 2014.

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

**Fieldwork.** The station was visited 9 times to perform inspections and 5 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 14, 2013, to March 10, 2014, when the gage was shut down for winter.



**E200.5 Precipitation gage**

## Daily Total Precipitation (in.) for E200.5

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0	0.24	0
2	0	0	IA	IA	IA	IA	0	0	0	0.12	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.67	IA	IA	IA	IA	0	0	0	0.02	0.56	0
5	0	0.02	IA	IA	IA	IA	0.07	0	0	0	0.14	0.1
6	0	0	IA	IA	IA	IA	0.21	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0.18	0.07	0	0
8	0	0	IA	IA	IA	IA	0	0	0.04	0.82	0	0
9	0.01	0	IA	IA	IA	IA	0	0	0	0.04	0	0
10	0.19	0	IA	IA	IA	IA	0	0	0	0	0.28	0.01
11	0	0	IA	IA	IA	0	0	0	0	0.05	0	0
12	0.04	0	IA	IA	IA	0	0	0	0	0.08	0	0
13	0.08S <sup>b</sup>	0	IA	IA	IA	0	0.04	0.01	0.05	0	0.01	0
14	0.01S	IA	IA	IA	IA	0.14	0.02S	0.01	0	0.64	0	0
15	0.17S	IA	IA	IA	IA	0.03	0	0	0	0.83	0.05	0
16	0.08S	IA	IA	IA	IA	0	0	0	0	0.17	0	0.01
17	0	IA	IA	IA	IA	0	0	0	0.01	0.04	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.04	0	0	0.48	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.12	0	0
21	0	IA	IA	IA	IA	0	0	0	0.1	0	0.01	0
22	0	IA	IA	IA	IA	0	0	0.21	0	0	0.09	0.06
23	0	IA	IA	IA	IA	0	0	0.14	0	0	0	0
24	0.32	IA	IA	IA	IA	0	0	0.31	0	0	0	0
25	0.01	IA	IA	IA	IA	0.03	0	0.01	0	0	0	0
26	0	IA	IA	IA	IA	0	0.01	0.01	0	0.13	0.15	0
27	0	IA	IA	IA	IA	0	0	0	0	0.38	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.13	0	0
29	0.02S	IA	IA	IA		0	0	0	0	0.43	0	0.16
30	0.05S	IA	IA	IA		0	0	0	0	0.03	0	0
31	0.01		IA	IA		0		0		0.74	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E200.5, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.99	0.69 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.2 <sup>a</sup>	0.38	0.7	0.38	5.32	1.53	0.34
<b>Mean Total for Period of record (in.)</b>	0.98	0.15	IA	IA	IA	IA	0.26	0.72	0.31	2.36	2.52	2.44
<b>Max Daily total (in.)</b>	0.32	0.67	IA	IA	IA	0.14	0.21	0.31	0.18	0.83	0.56	0.16
<b>Missing Days</b>	0	17	31	31	28	10	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents 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, 2014.

**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.** 1.0 in. on July 15, 2014.

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

**Fieldwork.** The station was visited 8 times to perform inspections and 2 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 13, 2013, to March 17, 2014, when the gage was shut down for winter.



**E203 Precipitation gage**

## Daily Total Precipitation (in.) for E203

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.01	0.34	0
2	0	0	IA	IA	IA	IA	0	0	0	0.25	0	0
3	0	0	IA	IA	IA	IA	0.01S <sup>b</sup>	0	0	0	0.01	0
4	0	0.88	IA	IA	IA	IA	0	0	0	0.01	0.59	0
5	0	0.01	IA	IA	IA	IA	0.07S	0	0	0	0.27	0.05
6	0	0	IA	IA	IA	IA	0.09S	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0.01S	0	0.28	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0.01	0.79	0	0
9	0.02H <sup>c</sup>	0	IA	IA	IA	IA	0	0	0	0.04	0	0
10	0.23H	0	IA	IA	IA	IA	0	0	0	0	0.19	0.01
11	0.01	0	IA	IA	IA	IA	0	0	0	0	0	0
12	0	0	IA	IA	IA	IA	0	0.01	0	0.04	0	0
13	0.13	IA	IA	IA	IA	IA	0.01	0.01	0.04	0.01	0	0
14	0	IA	IA	IA	IA	IA	0.03S	0	0	0.8	0	0
15	0.26S	IA	IA	IA	IA	IA	0	0.01	0	1	0.07	0
16	0.03S	IA	IA	IA	IA	IA	0	0	0	0.11	0	0
17	0	IA	IA	IA	IA	IA	0	0	0	0.04	0	0.00
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.05	0	0	0.35	0	0
20	0	IA	IA	IA	IA	0	0	0	0	0.13	0	0
21	0	IA	IA	IA	IA	0	0	0	0.23	0.02	0.02	0
22	0	IA	IA	IA	IA	0	0	0.4	0	0	0.1	0.04
23	0	IA	IA	IA	IA	0	0	0.35	0	0	0	0.01
24	0.32	IA	IA	IA	IA	0	0	0.21	0	0	0	0
25	0.02	IA	IA	IA	IA	0.03	0	0.04	0	0	0	0
26	0	IA	IA	IA	IA	0.01 S	0	0	0	0.06	0.62	0
27	0	IA	IA	IA	IA	0	0	0	0	0.39	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.16	0	0
29	0.02S	IA	IA	IA		0	0	0.02	0	0.16	0	0.15
30	0.02S	IA	IA	IA		0	0	0	0	0.01	0	0
31	0.01		IA	IA		0		0		0.88	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> S represents precipitation as snow.<sup>c</sup> H represents precipitation as hail.

## Monthly Total Precipitation (in.) for E203, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.07	0.89 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.04 <sup>a</sup>	0.27	1.05	0.56	5.26	2.21	0.26
<b>Mean Total for Period of Record (in.)</b>	0.97	0.30	IA	IA	IA	IA	0.45	0.74	0.53	1.82	1.73	1.60
<b>Max Daily Total (in.)</b>	0.26	0.88	IA	IA	IA	0.03	0.07	0.35	0.28	1.0	0.62	0.15
<b>Missing Days</b>	0	18	31	31	28	17	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.<sup>b</sup> IA represents 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, 2014.

**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.** 1.3 in. on July 29, 2014.

**Equipment.** The station is equipped with a rain gage, Rain Collection II. All equipment is powered with a solar-panel battery-charging system.

**Fieldwork.** The station was visited 23 times to perform inspections and 8 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 8, 2013, to March 18, 2014, when the gage was shut down for winter.



**E240 Precipitation gage**

## Daily Total Precipitation (in.) for E240

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0	0.29	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0	0
3	0	0	IA	IA	IA	IA	0.02	0	0	0.02	0	0
4	0	0.51	IA	IA	IA	IA	0	0	0	0.07	0.24	0.05
5	0	0.03	IA	IA	IA	IA	0	0	0	0.01	0	0.09
6	0	0	IA	IA	IA	IA	0	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0.01S <sup>b</sup>	0	0.26	0.44	0	0
8	0	IA	IA	IA	IA	IA	0	0	0	0.47	0.02	0
9	0.01	IA	IA	IA	IA	IA	0	0	0	0.05	0.01	0
10	0.35	IA	IA	IA	IA	IA	0	0	0	0.43	0	0
11	0.01	IA	IA	IA	IA	IA	0	0	0	0.03	0	0
12	0	IA	IA	IA	IA	IA	0	0.02	0	0	0	0
13	0.14	IA	IA	IA	IA	IA	0.14	0.08	0.09	0.04	0.12	0
14	0	IA	IA	IA	IA	IA	0.04S	0	0	0.79	0	0
15	0.04S	IA	IA	IA	IA	IA	0	0	0	0.28	0.26	0
16	0.43S	IA	IA	IA	IA	IA	0	0	0	0.01	0	0.01
17	0	IA	IA	IA	IA	IA	0	0	0.01	0	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0.01	0
19	0	IA	IA	IA	IA	0	0.07	0	0	0.86	0.01	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.04	0	0
21	0	IA	IA	IA	IA	0	0.01	0	0.1	0.02	0	0.01
22	0	IA	IA	IA	IA	0	0	0.15	0	0	0.17	0.07
23	0	IA	IA	IA	IA	0	0	0.29	0	0	0.01	0
24	0.36	IA	IA	IA	IA	0	0	0.26	0	0	0	0
25	0.01	IA	IA	IA	IA	0.06	0	0.1	0	0	0	0
26	0	IA	IA	IA	IA	0	0.02	0	0	0.01	0.12	0
27	0	IA	IA	IA	IA	0.03	0.07S	0	0	0.29	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.17	0	0
29	0.02S	IA	IA	IA		0	0	0	0	1.3	0	0.11
30	0.03S	IA	IA	IA		0	0	0	0	0.12	0	0
31	0.02		IA	IA		0		0		1.01	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E240, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.42	0.54 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.09 <sup>a</sup>	0.39	0.9	0.46	6.46	1.26	0.34
<b>Mean Total for Period of Record (in.)</b>	1.32	0.42	0.02	0	0	0	0.61	1.28	0.84	2.67	2.15	2.53
<b>Max Daily Total (in.)</b>	0.36	0.51	IA	IA	IA	0.06	0.07	0.29	0.26	1.30	0.29	0.11
<b>Missing Days</b>	0	23	31	31	28	17	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents 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, 2014.

**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.** 0.90 in. on July 15, 2014.

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

**Fieldwork.** The station was visited 23 times to perform inspections and 12 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 15, 2013, to March 10, 2014, when the gage was shut down for winter.



**E245.5 Precipitation gage**

## Daily Total Precipitation (in.) for E245.5

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0.07	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.02	0.18	0
2	0	0	IA	IA	IA	IA	0	0	0	0.34	0	0
3	0	0.01	IA	IA	IA	IA	0	0	0	0	0.02	0
4	0	0.01	IA	IA	IA	IA	0	0	0	0	0.53	0
5	0	0	IA	IA	IA	IA	0.05S <sup>b</sup>	0	0	0	0.29	0.13
6	0	0	IA	IA	IA	IA	0.08S	0	0	0	0	0
7	0	0.02	IA	IA	IA	IA	0.01	0	0.39	0.07	0	0
8	0	0	IA	IA	IA	IA	0.02	0	0	0.82	0	0.01
9	0	0.01	IA	IA	IA	IA	0	0	0	0.03	0	0
10	0.22	0	IA	IA	IA	IA	0	0	0	0.01	0.16	0
11	0	0	IA	IA	IA	0	0	0	0	0.07	0	0
12	0	0	IA	IA	IA	0	0	0.01	0	0.06	0	0
13	0.09	0	IA	IA	IA	0	0.02	0.01	0.07	0.02	0	0
14	0	IA	IA	IA	IA	0.15	0.02S	0.01	0	0.63	0	0
15	0.23S	IA	IA	IA	IA	0.18	0	0	0	0.9	0.03	0
16	0.07S	IA	IA	IA	IA	0.02	0	0	0	0.04	0	0
17	0	IA	IA	IA	IA	0	0	0	0	0.05	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.08	0	0	0.36	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.07	0	0
21	0	IA	IA	IA	IA	0	0	0	0.39	0	0.02	0
22	0	IA	IA	IA	IA	0	0	0.33	0	0.01	0.09	0.06
23	0	IA	IA	IA	IA	0	0	0.31	0	0.01	0	0
24	0.28	IA	IA	IA	IA	0	0	0.23	0	0	0	0
25	0.02	IA	IA	IA	IA	0.02	0	0.05	0.03	0	0	0
26	0	IA	IA	IA	IA	0.02	0	0	0	0.1	0.6	0
27	0	IA	IA	IA	IA	0	0	0	0	0.59	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.17	0	0
29	0.01S	IA	IA	IA		0	0	0.02	0	0.2	0	0.28
30	0.01S	IA	IA	IA		0	0	0	0	0.04	0	0
31	0.11		IA	IA		0		0		0.81	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E245.5, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.93	0.12	IA <sup>a</sup>	IA	IA	0.39 <sup>b</sup>	0.26	0.97	0.88	5.42	1.92	0.48
<b>Mean Total for Period of Record (in.)</b>	0.90	0.22	IA	IA	IA	IA	0.64	0.63	0.59	2.40	1.83	2.29
<b>Max Daily Total (in.)</b>	0.28	0.07	IA	IA	IA	0.18	0.08	0.33	0.39	0.90	0.60	0.28
<b>Missing Days</b>	0	18	31	31	28	10	0	0	0	0	0	0

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> Partial month because of inactivity, maintenance, or equipment failure.

**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, 2014.

**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.** 1.06 in. on July 19, 2014.

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

**Fieldwork.** The station was visited 18 times to perform inspections and 5 times to conduct maintenance.

**Precipitation record.** The precipitation gage gave a complete and satisfactory record, except for November 8, 2013, to February 25, 2014, when the gage was shut down for winter.



**E253 Precipitation gage**

## Daily Total Precipitation (in.) for E253

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0	0.28	0
2	0	0	IA	IA	IA	IA	0	0	0	0	0	0
3	0	0	IA	IA	IA	IA	0.02	0	0	0.02	0	0
4	0	0.5	IA	IA	IA	IA	0	0	0	0.03	0.2	0.04
5	0	0.02	IA	IA	IA	IA	0	0	0	0.01	0.03	0.05
6	0	0	IA	IA	IA	IA	0.01	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0.32	0.22	0	0
8	0	IA	IA	IA	IA	IA	0	0	0	0.53	0.03	0
9	0	IA	IA	IA	IA	IA	0	0	0	0.05	0	0
10	0.39	IA	IA	IA	IA	IA	0	0	0	0.22	0.02	0
11	0.01	IA	IA	IA	IA	IA	0	0	0	0.03	0	0
12	0	IA	IA	IA	IA	IA	0	0.03	0	0	0	0
13	0.1	IA	IA	IA	IA	IA	0.14	0.03	0.08	0.02	0.02	0
14	0	IA	IA	IA	IA	0.08	0.02	0	0	0.77	0	0
15	0.04S <sup>b</sup>	IA	IA	IA	IA	0.31	0	0	0	0.46	0.03	0
16	0.42S	IA	IA	IA	IA	0	0	0	0	0.06	0	0
17	0	IA	IA	IA	IA	0	0	0	0.04	0	0	0
18	0	IA	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.05	0	0	1.06	0	0
20	0	IA	IA	IA	IA	0	0.01	0	0	0.07	0	0
21	0	IA	IA	IA	IA	0	0	0	0.2	0.01	0	0
22	0	IA	IA	IA	IA	0	0	0.2	0	0	0.18	0.07
23	0	IA	IA	IA	IA	0	0	0.24	0	0	0	0
24	0.36	IA	IA	IA	IA	0	0	0.28	0	0	0	0
25	0.02	IA	IA	IA	IA	0.05	0	0.14	0	0	0	0
26	0	IA	IA	IA	IA	0.01	0.02	0.02	0	0.01	0.06	0
27	0	IA	IA	IA	IA	0.03	0.09	0	0	0.32	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.17	0	0.04
29	0.03S	IA	IA	IA		0	0	0	0	0.28	0	0.13
30	0.01S	IA	IA	IA		0	0	0	0	0.35	0	0
31	0.04		IA	IA		0		0		0.66	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E253, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.42	0.52	IA <sup>a</sup>	IA	IA	0.48 <sup>b</sup>	0.36	0.94	0.64	5.35	0.85	0.33
<b>Mean Total for Period of Record (in.)</b>	2.03	0.52	IA	IA	IA	IA	0.75	0.92	1.21	5.41	6.26	1.75
<b>Max Daily Total (in.)</b>	0.42	0.5	IA	IA	0	0.31	0.14	0.28	0.32	1.06	0.28	0.13
<b>Missing Days</b>	0	23	31	31	25	0	0	0	0	0	0	0

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> Partial month because of inactivity, maintenance, or equipment failure.

**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, 2014.

**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.** 1.8 in. on July 8, 2014.

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

**Fieldwork.** The station was visited 6 times to perform inspections and 2 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 26, 2013, to March 13, 2014, when the gage was shut down for winter.



**E257 Precipitation gage**

## Daily Total Precipitation (in.) for E257

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	0
3	0	0	IA	IA	IA	IA	0	0	0	0.02	0	0
4	0	0.6	IA	IA	IA	IA	0	0	0	0.02	0.63	0.01
5	0	0.04	IA	IA	IA	IA	0.05S	0	0	0	0.13	0.11
6	0	0	IA	IA	IA	IA	0.04S	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0.37	0.6	0	0
8	0	0	IA	IA	IA	IA	0	0	0	1.8	0.01	0
9	0	0	IA	IA	IA	IA	0	0	0	0.06	0	0
10	0.32	0	IA	IA	IA	IA	0	0	0	0.02	0.09	0.01
11	0.01	0	IA	IA	IA	IA	0	0	0	0.02	0	0
12	0	0	IA	IA	IA	IA	0	0.01	0	0	0	0
13	0.11	0	IA	IA	IA	IA	0.07	0.01	0.07	0.01	0.04	0
14	0	0	IA	IA	IA	0.16	0.02S	0	0	0.64	0.01	0
15	0.08S <sup>a</sup>	0.29	IA	IA	IA	0.2	0	0	0	0.4	0.11	0
16	0.32S	0.03	IA	IA	IA	0	0	0	0	0.02	0	0
17	0.01	0	IA	IA	IA	0	0	0	0.05	0	0	0
18	0	0	IA	IA	IA	0	0	0	0	0	0	0
19	0	0	IA	IA	IA	0	0.07	0	0	0.82	0	0
20	0	0.02	IA	IA	IA	0	0.01	0	0	0.07	0	0
21	0	0.32	IA	IA	IA	0	0	0	0.22	0.03	0	0
22	0	0	IA	IA	IA	0	0	0.3	0	0	0.13	0.05
23	0	0	IA	IA	IA	0	0	0.36	0	0	0	0.01
24	0.35	0	IA	IA	IA	0	0	0.26	0	0	0	0
25	0.02	0.16S	IA	IA	IA	0.04S	0	0.06	0	0	0	0
26	0	IA <sup>b</sup>	IA	IA	IA	0.01S	0.01	0	0	0	0.1	0
27	0	IA	IA	IA	IA	0.01S	0.08	0	0	0.38	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.16	0	0.01
29	0.03S	IA	IA	IA		0	0	0	0	0.3	0	0.09
30	0.04S	IA	IA	IA		0	0	0	0	0.18	0	0
31	0.01S		IA	IA		0		0		1.1	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E257, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.29	1.46 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.42	0.35	1.0	0.71	6.65	1.46	0.29
<b>Mean Total for Period of Record (in.)</b>	1.54	0.32	IA	IA	IA	IA	1.01	0.92	0.73	3.86	3.11	2.82
<b>Max Daily Total (in.)</b>	0.32	0.32	IA	IA	IA	0.20	0.08	0.36	0.37	1.8	0.63	0.11
<b>Missing Days</b>	0	5	31	31	28	13	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents 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, 2014.

**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.** 1.09 in. on July 8, 2014.

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

**Fieldwork.** The station was visited 7 times to perform inspections and 3 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 26, 2013, to March 14, 2014, when the gage was shut down for winter.



E262.4 Precipitation gage

## Daily Total Precipitation (in.) for E262.4

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.02	0.28	0
2	0	0	IA	IA	IA	IA	0	0	0	0.12	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0.02	0
4	0	0.71	IA	IA	IA	IA	0	0	0	0	0.87	0
5	0	0.01	IA	IA	IA	IA	0.03S <sup>b</sup>	0	0	0	0.3	0.32
6	0	0	IA	IA	IA	IA	0.02S	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0.45	0.22	0	0
8	0	0	IA	IA	IA	IA	0	0	0	1.09	0	0.01
9	0.02H <sup>c</sup>	0	IA	IA	IA	IA	0	0	0	0.05	0	0
10	0.28	0	IA	IA	IA	IA	0	0	0	0	0.25	0
11	0	0	IA	IA	IA	IA	0	0	0	0.07	0	0
12	0	0	IA	IA	IA	IA	0	0.01	0	0	0	0
13	0.1H	0.01	IA	IA	IA	IA	0.03	0.02	0.18	0.02	0	0
14	0	0	IA	IA	IA	0.19	0.01S	0	0	0.76	0	0
15	0.25S	0.24	IA	IA	IA	0.03	0	0	0	0.74	0.05	0
16	0.13S	0.02	IA	IA	IA	0	0	0	0	0	0	0
17	0	0	IA	IA	IA	0	0	0	0.01	0	0	0
18	0	0	IA	IA	IA	0	0	0	0.01	0	0	0
19	0	0	IA	IA	IA	0	0.08	0	0	0.59	0	0
20	0	0.03S	IA	IA	IA	0	0	0	0	0.04	0	0
21	0	0.43	IA	IA	IA	0	0.02	0	0.68	0	0.01	0
22	0	0	IA	IA	IA	0	0	0.24	0	0	0.12	0.11
23	0	0	IA	IA	IA	0	0	0.55	0	0.04	0	0
24	0.4	0.02S	IA	IA	IA	0	0	0.29	0	0	0	0
25	0.02	0.52S	IA	IA	IA	0.03S	0	0.04	0	0	0	0
26	0	IA	IA	IA	IA	0.01S	0	0	0	0.01	0.69	0.01
27	0	IA	IA	IA	IA	0	0	0	0	0.6	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.24	0	0
29	0.02S	IA	IA	IA		0	0	0	0	0.7	0	0.28
30	0.02S	IA	IA	IA		0	0	0	0	0.13	0	0.01
31	0.01		IA	IA		0		0		0.95	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

<sup>c</sup> H represents precipitation as hail.

## Monthly Total Precipitation (in.) for E262.4, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.25	1.99	IA*	IA	IA	0.26	0.19	1.15	1.33	6.39	2.59	0.74
<b>Mean Total for Period of Record (in.)</b>	1.37	0.21	IA	IA	IA	IA	0.74	0.78	0.45	3.53	1.97	2.43
<b>Max Daily Total (in.)</b>	0.28	0.71	IA	IA	0.19	IA	0.08	0.55	0.68	1.09	0.87	0.32
<b>Missing Days</b>	0	5	31	31	28	13	0	0	0	0	0	0

\* IA represents 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, 2014.

**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.** 0.95 in. on July 8, 2014.

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

**Fieldwork.** The station was visited 20 times to perform inspections and 8 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 19, 2013, to March 10, 2014, when the gage was shut down for winter.



**E265 Precipitation gage**

## Daily Total Precipitation (in.) for E265

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.14	0.11	0
2	0	0	IA	IA	IA	IA	0	0	0	0.4	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.85	IA	IA	IA	IA	0	0	0	0	0.21	0
5	0	0	IA	IA	IA	IA	0.01	0	0	0	0.26	0.21
6	0	0.01	IA	IA	IA	IA	0.02S <sup>b</sup>	0	0	0.04	0	0
7	0	0	IA	IA	IA	IA	0.01S	0	0.43	0	0	0
8	0	0	IA	IA	IA	IA	0	0	0.04	0.95	0	0.01
9	0	0	IA	IA	IA	IA	0	0	0	0.01	0	0
10	0.25	0	IA	IA	IA	IA	0	0	0	0.01	0.11	0
11	0.01	0	IA	IA	IA	0	0	0	0	0	0	0
12	0.01	0	IA	IA	IA	0	0	0.02	0	0	0	0
13	0.03	0	IA	IA	IA	0	0	0	0.35	0	0.02	0
14	0	0	IA	IA	IA	0.05	0	0.02	0	0.51	0	0
15	0.22S	0.26	IA	IA	IA	0.05	0	0	0	0.3	0.02	0
16	0.01S	0.05	IA	IA	IA	0	0	0	0	0.01	0	0
17	0	0	IA	IA	IA	0	0	0	0.11	0.01	0	0
18	0	0	IA	IA	IA	0	0	0	0	0	0	0
19	0	IA	IA	IA	IA	0	0.16	0	0	0.45	0	0
20	0	IA	IA	IA	IA	0	0	0	0	0.03	0	0
21	0	IA	IA	IA	IA	0	0	0	0.17	0	0.03	0
22	0	IA	IA	IA	IA	0	0	0.51	0	0	0.09	0.09
23	0	IA	IA	IA	IA	0	0	0.22	0.02	0.39	0	0
24	0.27	IA	IA	IA	IA	0	0	0.35	0	0	0	0
25	0.02	IA	IA	IA	IA	0.03S	0	0.06	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.01	0.3	0
27	0	IA	IA	IA	IA	0	0.01S	0	0	0.06	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.09	0	0
29	0	IA	IA	IA		0	0	0	0	0.61	0	0.24
30	0.03S	IA	IA	IA		0	0	0	0	0.03	0	0
31	0.01		IA	IA		0		0		0.41	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E265, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.86	1.17 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.13	0.21	1.18	1.12	4.46	1.15	0.55
<b>Mean Total for Period of Record (in.)</b>	1.08	0.33	IA	IA	IA	IA	0.56	0.69	0.60	2.94	1.40	2.13
<b>Max Daily Total (in.)</b>	0.27	0.85	IA	IA	IA	0.05	0.16	0.51	0.43	0.95	0.26	0.24
<b>Missing Days</b>	0	12	31	31	28	10	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

<sup>b</sup> IA represents 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, 2014.

**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.** 0.89 in. on July 15, 2014.

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

**Fieldwork.** The station was visited 7 times to perform inspections and 5 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 26, 2013, to March 13, 2014, when the gage was shut down for winter.



**E267.4 Precipitation gage**

## Daily Total Precipitation (in.) for E267.4

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.02	0.15	0
2	0	0	IA	IA	IA	IA	0	0	0	0.34	0.01	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.93	IA	IA	IA	IA	0	0	0	0	0.35	0
5	0	0.01	IA	IA	IA	IA	0	0	0	0	0.22	0.15
6	0	0	IA	IA	IA	IA	0.03S <sup>b</sup>	0	0	0	0	0
7	0	0	IA	IA	IA	IA	0	0	0.26	0.33	0	0
8	0	0	IA	IA	IA	IA	0	0	0.02	0.85	0	0.01
9	0.01	0	IA	IA	IA	IA	0	0	0	0.03	0	0
10	0.25	0	IA	IA	IA	IA	0	0	0	0	0.22	0
11	0	0	IA	IA	IA	IA	0	0	0	0.02	0	0
12	0	0	IA	IA	IA	IA	0	0.01	0	0	0	0
13	0.07	0.01	IA	IA	IA	IA	0.01	0	0	0.01	0.01	0
14	0	0	IA	IA	IA	0.11	0.02S	0	0	0.75	0	0
15	0.25S	0.23	IA	IA	IA	0.19	0	0	0	0.89	0.02	0
16	0.07S	0.02	IA	IA	IA	0	0	0	0	0	0	0
17	0	0	IA	IA	IA	0	0	0	0	0.02	0	0
18	0	0	IA	IA	IA	0	0	0	0	0	0	0
19	0	0	IA	IA	IA	0	0.1	0	0	0.48	0	0
20	0	0.03S	IA	IA	IA	0	0	0	0	0.03	0	0
21	0	0.34	IA	IA	IA	0	0	0	0.51	0	0.02	0
22	0	0	IA	IA	IA	0	0	0.3	0	0	0.1	0.08
23	0	0	IA	IA	IA	0	0	0.33	0	0.09	0	0
24	0.29	0.03S	IA	IA	IA	0	0	0.27	0	0	0	0
25	0.02	0.42S	IA	IA	IA	0.04	0	0.05	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0	0	0.05	0.58	0
27	0	IA	IA	IA	IA	0	0	0	0	0.38	0.01	0
28	0	IA	IA	IA	IA	0	0	0	0	0.15	0	0
29	0.01S	IA	IA	IA		0	0	0.01	0	0.42	0	0.29
30	0.03S	IA	IA	IA		0	0	0	0	0.1	0	0
31	0		IA	IA		0		0		0.64	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E267.4, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1	2.02 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.34	0.16	0.97	0.79	5.6	1.69	0.53
<b>Mean Total for Period of Record (in.)</b>	1.21	0.22	IA	IA	IA	IA	0.65	0.68	0.55	2.56	1.59	2.33
<b>Max Daily Total (in.)</b>	0.29	0.93	IA	IA	IA	13	0.03S <sup>c</sup>	0.33	0.51	0.89	0.58	0.29
<b>Missing Days</b>	0	5	31	31	28	0.19	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.<sup>b</sup> IA represents inactive gage during seasonal shutdown.<sup>c</sup> S represents precipitation as snow.

**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, 2014.

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

**Maximum Daily Total Precipitation for Period of Record.** 1.19 in. on July 19, 2007.

**Maximum Daily Total Precipitation for Monsoon Season.** 0.98 in. on July 23, 2014.

**Equipment.** The station is equipped with a Rain Collection II tipping bucket rain gage. Equipment is powered with a solar-panel battery-charging system.

**Fieldwork.** The station was visited 13 times to perform inspections and 4 times to conduct maintenance.

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for November 25, 2013, to March 11, 2014, when the gage was shut down for winter.



**E340 Precipitation gage**

## Daily Total Precipitation (in.) for E340

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	IA <sup>a</sup>	IA	IA	IA	0	0	0	0.08	0.09	0
2	0	0	IA	IA	IA	IA	0	0	0	0.31	0	0
3	0	0	IA	IA	IA	IA	0	0	0	0	0	0
4	0	0.82	IA	IA	IA	IA	0	0	0	0	0.3	0
5	0	0.01	IA	IA	IA	IA	0	0	0	0	0	0.46
6	0	0	IA	IA	IA	IA	0.01	0	0	0.03	0	0
7	0	0.01	IA	IA	IA	IA	0	0	0.16	0	0	0
8	0	0	IA	IA	IA	IA	0	0.01	0	0.65	0	0
9	0	0	IA	IA	IA	IA	0	0	0	0	0	0
10	0.19	0	IA	IA	IA	IA	0	0	0	0	0.07	0
11	0	0	IA	IA	IA	IA	0	0	0	0.01	0.02	0
12	0	0	IA	IA	IA	0	0	0.03	0	0.06	0	0
13	0.03	0.01	IA	IA	IA	0	0	0	0.18	0	0.04	0
14	0	0	IA	IA	IA	0.03	0	0.01	0	0.42	0	0
15	0.19S <sup>b</sup>	0.31	IA	IA	IA	0.04	0	0	0	0.27	0.11	0
16	0.01S	0.04	IA	IA	IA	0	0	0	0	0.03	0	0
17	0.01	0	IA	IA	IA	0	0	0	0.13	0	0	0
18	0	0.01	IA	IA	IA	0	0	0	0	0	0	0
19	0	0.01	IA	IA	IA	0	0.1	0	0	0.24	0	0
20	0	0.03	IA	IA	IA	0	0	0	0	0.04	0	0
21	0	0.34	IA	IA	IA	0	0	0	0.32	0	0.03	0
22	0	0	IA	IA	IA	0	0	0.38	0	0	0.09	0.29
23	0	0	IA	IA	IA	0	0	0.19	0	0.98	0	0.01
24	0.3	0.12	IA	IA	IA	0	0	0.33	0	0	0	0
25	0.02	IA	IA	IA	IA	0.03	0	0.04	0	0	0	0
26	0	IA	IA	IA	IA	0	0	0.01	0	0	0.28	0
27	0	IA	IA	IA	IA	0	0	0	0	0.04	0	0
28	0	IA	IA	IA	IA	0	0	0	0	0.09	0	0
29	0	IA	IA	IA		0	0	0	0	0.68	0	0.38
30	0.02S	IA	IA	IA		0	0	0	0	0.11	0	0
31	0		IA	IA		0		0		0.27	0	

<sup>a</sup> IA represents inactive gage during seasonal shutdown.

<sup>b</sup> S represents precipitation as snow.

## Monthly Total Precipitation (in.) for E340, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.77	1.71 <sup>a</sup>	IA <sup>b</sup>	IA	IA	0.1 <sup>a</sup>	0.11	1	0.79	4.31	1.03	1.14
<b>Mean Total for Period of Record (in.)</b>	0.94	0.38	IA	IA	IA	IA	0.6	0.63	0.45	3.65	1.27	2.1
<b>Max Daily Total (in.)</b>	0.19	0.82	IA	IA	IA	0.04	0.01	0.38	0.32	0.98	0.28	0.46
<b>Missing Days</b>	0	6	31	31	28	11	0	0	0	0	0	0

<sup>a</sup> Partial month because of inactivity, maintenance, or equipment failure.

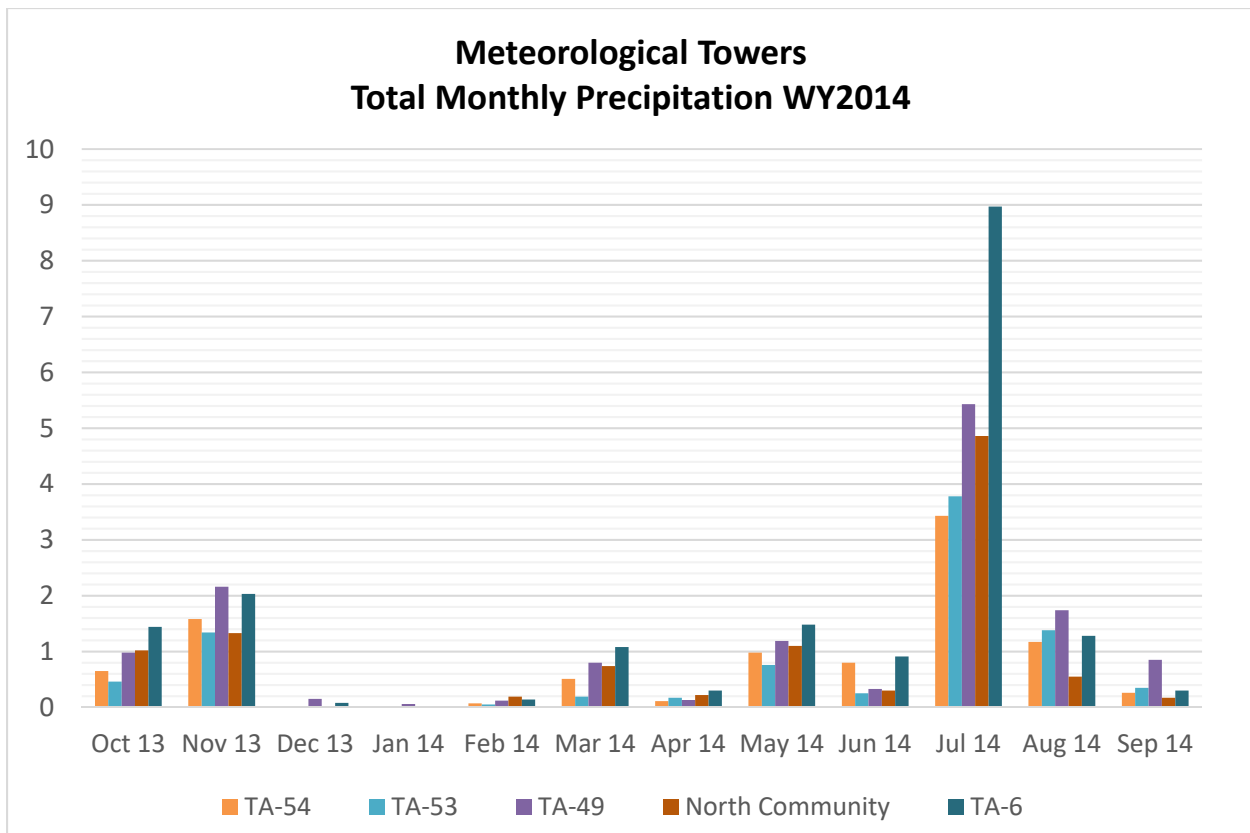
<sup>b</sup> IA represents inactive gage during seasonal shutdown.

### 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 totaled 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 <http://weather.lanl.gov>.

Figure 10 shows the total monthly precipitation at each of the five meteorological towers from October 2013 to September 2014.



Note: The gages are listed in ascending order by elevation from TA-54 (6553 ft) to TA-06 (7427 ft).

**Figure 10 The total monthly precipitation for the meteorological towers for WY2014**

**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, 2014.

**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.** 2.0 in. on July 8, 2014.

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

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for December 11, 12, 15, 16, 19, 21, 22, 25, and 27, 2013; January 1, 2, and 5, 2014; February 3, 2014; March 11 and 18, 2014; and July 11, 2014, when no data were collected because of equipment failure.



**TA-06 Meteorological tower**



## Daily Total Precipitation (in.) for TA-06

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	E*	0	0.65	0	0	0	0	0.22	0
2	0	0	0	E	0	0.04	0	0	0	0	0	0
3	0	0	0	0	E	0	0	0	0	0.01	0	0
4	0	0.7	0	0	0.02	0	0	0	0	0.02	0.53	0.01
5	0	0.01	0.01	E	0	0	0.04	0	0	0	0.07	0.07
6	0	0	0	0	0	0	0.03	0	0	0	0	0
7	0	0	0.06	0	0	0	0	0	0.4	1.46	0	0
8	0	0	0.01	0	0	0	0	0	0	2	0	0
9	0	0	0	0	0	0	0	0	0	0.03	0.01	0
10	0.36	0	0	0	0	0	0	0	0	0.04	0.02	0
11	0	0	E	0	0	E	0	0	0	E	0	0
12	0	0	E	0	0	0	0	0.01	0	0.01	0	0
13	0.13	0	0	0	0	0	0.09	0	0.09	0.01	0.02	0
14	0.01	0	0	0	0	0.31	0.02	0	0	0.86	0	0
15	0.12	0.19	E	0	0	0.03	0	0	0	0.68	0.16	0
16	0.33	0	E	0	0	0	0	0	0	0.09	0	0
17	0	0	0	0	0	0	0	0	0.02	0.01	0	0
18	0	0	0	0	0	E	0	0	0	0	0	0
19	0	0	E	0	0	0	0.04	0	0	0.9	0	0
20	0	0	0	0	0	0	0	0	0	0.03	0	0
21	0	0.91	E	0	0	0	0	0	0.4	0.05	0	0
22	0	0	E	0	0	0	0	0.37	0	0	0.14	0.08
23	0	0.18	0	0	0	0	0	0.45	0	0	0	0
24	0.4	0.04	0	0	0	0	0	0.29	0	0	0	0
25	0.01	0	E	0	0	0.03	0	0.35	0	0	0	0
26	0	0	0	0	0	0.02	0.06	0.01	0	0.04	0.11	0
27	0	0	E	0	0.12	0	0.02	0	0	0.72	0	0
28	0	0	0	0	0	0	0	0	0	0.18	0	0.01
29	0.03	0	0	0		0	0	0	0	0.58	0	0.13
30	0.05	0	0	0		0	0	0	0	0.08	0	0
31	0		0	0.02		0		0		1.17	0	

\* E represents equipment failure.

## Monthly Total Precipitation (in.) for TA-06, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	1.44	2.03	0.08*	0.02	0.14*	1.08	0.30	1.48	0.91	8.97*	1.28	0.3
<b>Mean Total for Period of Record (in.)</b>	1.59	0.84	0.89	0.87	0.78	0.92	0.96	1.15	1.12	2.69	3.33	2.07
<b>Max Daily Total (in.)</b>	0.36	0.91	0.06	0.02	0.12	0.65	0.09	0.45	0.09	1.46	0.53	0.13
<b>Missing Days</b>	0	0	9	3	1	2	0	0	0	1	0	0

\*Partial month because of inactivity, maintenance, or equipment failure.

### 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, 2014.

**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.** 0.79 in. on July 29, 2014.

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

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for February 24–26, 2014; April 18, 2014; and September 13 and 21, 2014, when no data were collected because of equipment failure.



TA-49 Precipitation gage

## Daily Total Precipitation (in.) for TA-49

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0.59	0	0	0	0	0.2	0
2	0	0	0	0	0	0.04	0	0	0	0.3	0	0
3	0	0	0	0	0.07	0	0	0	0	0.01	0	0
4	0	0.64	0.01	0	0	0	0	0	0	0	0.35	0
5	0	0.01	0.01	0	0	0	0	0	0	0	0.07	0.39
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0.04	0	0	0	0	0	0.22	0.03	0	0
8	0	0	0.02	0	0	0	0	0	0	0.77	0	0
9	0	0	0	0	0	0	0	0	0	0.03	0	0
10	0.24	0	0	0	0	0	0	0	0	0	0.24	0.03
11	0	0	0	0	0	0	0	0	0	0.04	0	0
12	0	0	0	0	0	0	0	0.01	0	0	0	0
13	0.05	0	0	0	0	0	0.01	0	0.32	0	0	E*
14	0	0	0	0	0	0.12	0.01	0	0	0.59	0	0
15	0.33	0.25	0	0	0	0.02	0	0	0	0.51	0	0
16	0	0.03	0	0	0	0	0	0	0	0.02	0	0
17	0	0	0	0	0	0	0	0	0.03	0	0	0
18	0	0	0	0	0	0	E	0	0	0	0	0
19	0	0	0	0	0	0	0.06	0	0	0.6	0	0
20	0	0.02	0	0	0	0	0	0	0	0.01	0	0
21	0	0.92	0.04	0	0	0	0	0	0.59	0	0	E
22	0	0.01	0.03	0	0	0	0	0.25	0	0	0.11	0.14
23	0	0.23	0	0	0	0	0	0.6	0	0.11	0	0
24	0.3	0.05	0	0	E	0	0	0.3	0	0	0	0
25	0.03	0	0	0	E	0.02	0	0.03	0	0	0	0
26	0	0	0	0	E	0.01	0.03	0	0	0	0.77	0
27	0	0	0	0	0.05	0	0.01	0	0	0.69	0	0
28	0	0	0	0	0	0	0	0	0	0.18	0	0
29	0.01	0	0	0		0	0.01	0	0	0.79	0	0.29
30	0.02	0	0	0		0	0	0	0	0.21	0	0
31	0		0	0.06		0		0		0.54	0	

\* E represents equipment failure.

## Monthly Total Precipitation (in.) for TA-49, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.98	2.16	0.15	0.06	0.12	0.80	0.13	1.19	1.16	5.43	1.74	0.85
<b>Mean Total for Period of Record (in.)</b>	1.55	0.86	0.83	0.88	0.76	0.88	0.87	1.03	0.93	2.27	2.84	1.97
<b>Max Daily Total (in.)</b>	0.33	0.92	0.04	0.06	0.07	0.59	0.06	0.25	0.59	0.79	0.77	0.39
<b>Missing Days</b>	0	0	0	0	3	0	1	0	0	0	0	2

### 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, 2014.

**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.** 0.96 in. on July 31, 2014.

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

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for September 21, 2014, when no data were collected because of equipment failure.



TA-53 Precipitation gage (foreground) and meteorological tower (background)

## Daily Total Precipitation (in.) for TA-53

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0.18	0	0	0	0	0.16	0
2	0	0	0	0	0	0	0	0	0	0.27	0	0
3	0	0	0	0	0.01	0	0	0	0	0	0	0
4	0	0.87	0	0	0	0	0	0	0	0	0.22	0
5	0	0	0	0	0	0	0.08	0	0	0	0.1	0.2
6	0	0	0	0	0	0	0.08	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0.13	0	0	0
8	0	0	0.01	0	0	0	0	0	0	0.72	0	0
9	0.01	0	0	0	0	0	0	0	0	0	0	0
10	0.14	0	0	0	0	0	0	0	0	0	0.48	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	0.06	0	0	0	0	0	0	0	0.02	0	0	0
14	0	0	0	0	0	0.01	0.01	0	0	0.57	0	0
15	0.08	0.03	0	0	0	0	0	0	0	0.84	0	0
16	0	0	0	0	0	0	0	0	0	0.08	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	0.01	0	0
19	0	0	0	0	0	0	0	0	0	0.07	0	0
20	0	0	0	0	0	0	0	0	0	0.05	0	0
21	0	0.37	0	0	0	0	0	0	0.1	0.06	0.01	E*
22	0	0	0	0	0	0	0	0.42	0	0	0.01	0
23	0	0.07	0	0	0	0	0	0.22	0	0	0	0
24	0.17	0	0	0	0	0	0	0.1	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	0.4	0
27	0	0	0	0	0.04	0	0	0	0	0.09	0	0
28	0	0	0	0	0	0	0	0	0	0.03	0	0
29	0	0	0	0		0	0	0.02	0	0.03	0	0.15
30	0	0	0	0		0	0	0	0	0	0	0
31	0		0	0		0		0		0.96	0	

\* E represents equipment failure.

## Monthly Total Precipitation (in.) for TA-53, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.46	1.34	0.01	0.00	0.05	0.19	0.17	0.76	0.25	3.78	1.38	0.35
<b>Mean Total for Period of Record (in.)</b>	1.33	0.66	0.71	0.73	0.65	0.78	0.82	1.00	0.82	1.85	2.49	1.59
<b>Max Daily Total (in.)</b>	0.17	0.87	0.01	0	0	0.158	0.08	0.42	0.13	0.96	0.48	0.20
<b>Missing Days</b>	0	0	0	0	0	0	0	0	0	0	0	1

### **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, 2014.

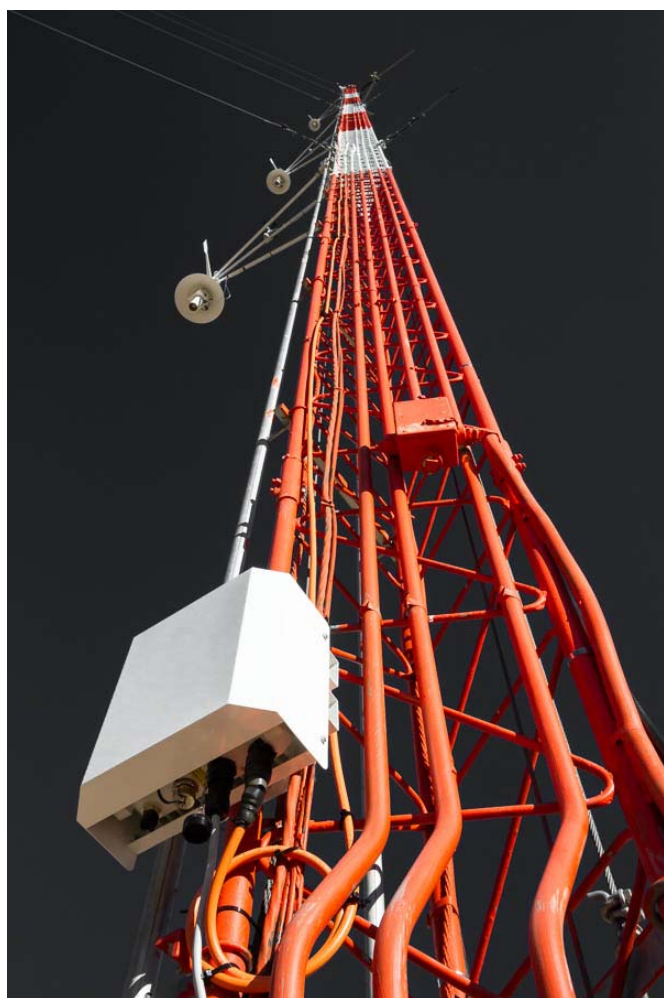
**Gage.** Elevation of gage is 6553 ft using LANL LIDAR DEM with NAD 83.

**Maximum Daily Total Precipitation for Period of Record.** 3.28 in. on September 12, 2013.

**Maximum Daily Total Precipitation for Monsoon Season.** 1.46 in. on July 8, 2014.

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

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for October 30, 2013; November 5, 6, 8–10, 22, 24, 26, 29, and 30, 2013; December 2–31, 2014; January 1–6 and 8, 2014; March 7, 2014; June 19, 2014; and September 15, 17, and 21, 2014, when no data were collected because of equipment failure.



**TA-54 Meteorological tower**

## Daily Total Precipitation (in.) for TA-54

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	E <sup>a</sup>	0	0.45	0	0	0	0.11	0.12	0
2	0	0	E	E	0	0.01	0	0	0	0.65	0	0
3	0	E	E	E	0.05	0	0	0	0	0.02	0	0
4	0	0.81	E	E	0	0	0	0	0	0	0.08	0
5	0	E	E	E	0	E	0.03	0	0	0	0.27	0.06
6	0	E	E	E	0	0	0.01	0	0	0.03	0	0
7	E	0	E	0	0	E	0	0	0.47	0	0	0
8	0	E	E	E	0	0	0	0	0.01	1.46	0	0
9	0	E	E	0	0	0	0	0	0	0.01	0	0
10	0.27	E	E	0	0	0	0	0	0	0	0.1	0
11	0	0	E	0	0	0	0	0	0	0	0	0
12	0	0	E	0	0	0	0	0.02	0	0	0	0
13	0.01	0	E	0	0	0	0	0	0.19	0	0.01	0
14	0	0	E	0	0	0.04	0	0	E	0.53	0	0
15	0.12	0.14	E	0	0	0	0	0	0	0.36	0.02	E
16	0	0	E	0	0	0	0	0	0	0	0	0
17	0	0	E	0	0	0	0	0	E	0	0	E
18	0	0	E	0	0	0	0	0	0	0	0	0
19	0	0	E	0	0	0	0.07	0	E	0.04	0	0
20	0	0	E	0	0	0	0	0	0	0	0	0
21	0	0.52	E	0	0	0	0	0	0.13	0	0.02	E
22	0	E	E	0	0	0	0	0.53	0	0	0.09	0.01
23	0	0.09	E	0	0	0	0	0.12	0	0.01	0	0
24	0.24	E	E	0	0	0	0	0.26	0	0	0	0
25	0.01	0.02	E	0	0	0.01	0	0.05	0	0	0	0
26	0	IA <sup>b</sup>	E	0	0	0	0	0	0	0	0.46	0
27	0	0	E	0	0.02	0	0	0	0	0.1	0	0
28	0	0	E	0	0	0	0	0	0	0.06	0	0
29	0	E	E	0		0	0	0	0	0.06	0	0.19
30	E	E	E	0		0	0	0	0	0	0	0
31	0		E	0.01		0		0		0.54	0	

<sup>a</sup> E represents equipment failure.<sup>b</sup> IA represents inactive gage during seasonal shutdown.

## Monthly Total Precipitation (in.) for TA-54, October 2013–September 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Total (in.)</b>	0.65*	1.58*	0.0*	0.01	0.07	0.51	0.11	0.98	0.8*	3.98	1.17	0.26
<b>Mean Total for Period of Record (in.)</b>	1.40	0.68	0.66	0.59	0.52	0.76	0.73	0.84	0.93	1.97	2.43	1.65
<b>Max Daily Total (in.)</b>	0.24	0.81	0	0.01	0.05	0.45	0.07	0.53	0.47	1.46	0.46	0.19
<b>Missing Days</b>	1	10	30	7	0	0	0	0	1	0	0	3

\*Partial month because of inactivity, maintenance, or equipment failure.

**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, 2014.

**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.** 0.70 in. on July 8, 2014.

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

**Precipitation Record.** The precipitation gage gave a complete and satisfactory record, except for December 10–14 and 18, 2013; March 18 and 23–24, 2014; May 18 and 28, 2014; June 18, 2014; and September 21, 2014, when no data were collected because of equipment failure.

No image available for the North Community precipitation gage.



## Daily Total Precipitation (in.) for North Community

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0.53	0	0	0	0	0.16	0
2	0	0	0	0	0	0.03	0	0	0	0	0	0
3	0	0	0	0	0.01	0	0	0	0	0	0.01	0
4	0	0.38	0	0	0.03	0	0	0	0	0.06	0.06	0.01
5	0	0	0	0	0	0	0	0	0	0	0.01	0.06
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0.01	0	0	0	0	0	0.16	0.6	0	0
8	0	0	0	0	0	0	0	0	0	0.7	0	0
9	0	0	0	0	0	0	0	0	0	0.02	0	0
10	0.26	0	E*	0	0	0	0	0	0	0.01	0	0
11	0	0	E	0	0	0	0	0	0	0.07	0	0
12	0	0	E	0	0	0	0	0.02	0	0	0	0.02
13	0.14	0	E	0	0	0	0.11	0	0.06	0.01	0.02	0
14	0	0	E	0	0	0.08	0.01	E	0	0.53	0	0
15	0.32	0.15	0	0	0	0.04	0	0	0	0.5	0.11	0
16	0	0.05	0	0	0	0	0	0	0	0.07	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	E	0	0	E	0	0	IA	0	0	0
19	0	0	0	0	0	0	0.03	0	0	0.23	0	0
20	0	0	0	0	0	0	0	0	0	0.01	0	0
21	0	0.6	0	0	0	0	0	0	0.08	0.01	0	E
22	0	0.03	0	0	0	0	0	0.16	0	0	0.1	0.03
23	0	0.08	0	0	0	E	0	0.39	0	0	0	0
24	0.26	0.01	0	0	0	E	0	0.25	0	0	0	0
25	0	0.03	0	0	0	0.01	0	0.27	0	0	0	0
26	0	0	0	0	0	0.05	0.07	0.01	0	0.59	0.08	0
27	0	0	0	0	0.15	0	0	0	0	0.35	0	0
28	0	0	0	0	0	0	0	E	0	0.08	0	0
29	0	0	0	0		0	0	0	0	0.54	0	0.05
30	0.04	0	0	0		0	0	E	0	0	0	0
31	0		0	0.01		0		0		0.48	0	

\* E represents equipment failure.

## Monthly Total Precipitation (in.) for North Community, October 2013–October 2014

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
<b>Total (in.)</b>	1.02	1.33	0.01	0.01	0.19	0.74	0.22	1.1*	0.30	4.86	0.55	0.17	0.67
<b>Mean Total for Period of Record (in.)</b>	1.69	0.80	0.82	0.82	0.76	0.92	1.02	1.12	1.24	2.73	3.45	1.67	1.64
<b>Max Daily Total (in.)</b>	0.32	0.60	0.01	0.01	0.15	0.53	0.11	0.39	0.16	0.59	0.11	0.06	0.09
<b>Missing Days</b>	0	0	6	0	0	3	0	1	1	0	0	1	0

\*Partial month because of inactivity, maintenance, or equipment failure.

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Previous LANL reports in this series: “Surface Water Data at Los Alamos National Laboratory” for Water Years (WY) 1995 to 2013 are available in pdf format. The reports can be accessed at the electronic public reading room at <http://epr.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.

**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<sup>3</sup>/s, cfs) 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** 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.

**Environmental Protection Agency (U.S.) (EPA)** 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 (GH)** 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.

**Gage station** is a particular site on a stream, canal, lake, or reservoir in which systematic observations of hydrologic data are obtained.

**HWM** is high-water mark.

**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.

**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.

**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.

**Precipitation emergency notification stations (PENS)** is a precipitation notification system for LANL to provide emergency notification during monsoon rain events.

**Reference point (RP)** 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 gage 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.

**SWSC** is sanitary wastewater systems consolidation.

**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 (WDR)** 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-month 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 months. Thus, the year ending September 30, 1980, is called the “1980 water year” or WY1980.