WATER QUALITY SURVEY SUMMARY

FOR THE

CHAMA RIVER WATERSHED

2023-2024

Rio Chama Downstream of Heron Lake

Prepared by

Surface Water Quality Bureau

New Mexico Environment Department

November 2024

Water quality surveys and assessments conducted by the New Mexico Environment Department Surface Water Quality Bureau are completed to fulfill Section 106 of the Clean Water Act [33 USC 1251 et seq.], Work Program for Water Quality Management. This project was funded, in part, by a grant from the U.S. Environmental Protection Agency.

The work conducted by the New Mexico Surface Water Quality Bureau on the 2023-2024 Rio Chama Watershed Survey is shown in the tables below. The monitoring team completed the survey in two years having conducted 109% of planned sampling events. The number exceeds 100% because the team conducted more sampling than planned for various reasons documented in the comments below. The completion percentage for each water chemistry parameter is detailed in Table 1. The completion percentage for term deployment, biological, and physical habitat sampling are detailed in Table 2.

All data were collected in accordance with procedures documented in the SWQB QAPP (NMED/SWQB 2021) and the applicable SWQB Standard Operating Procedures for Data Collection available at https://www.env.nm.gov/surface-water-quality/protocols-and-planning/. Water quality samples were submitted to the SLD or processed in the SWQB laboratory in accordance with procedures as outlined in the SWQB SOPs. More information about the survey can be found in the Rio Chama 2023-2024 Field Sampling Plan. Data will be available for download at EPA's Water Quality Data Portal (https://www.waterqualitydata.us/) by August 1st, 2025. Contact Miguel Montoya at miguel.montoya@env.nm.gov or 505-819-9882 for questions.

Table 1. Water Chemistry Sampling Frequency

Map #	Station Name	Priority	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-volatile Organics		Radionuclides		Comments
Planned/Completed			P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
1	Abiquiu Creek at US 84 bridge - 29Abiqui001.8	2	4	4	4	4	4	4	4	4	4	4							
2	ABIQUIU RESERVOIR AT THE DAM - 29AbiquiuRDam	L	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
3	ABIQUIU RESERVOIR CHAMA R INLET - 29AbiqReInlet	L	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
6	Canjilon Creek 5 miles N. of Echo Amp - 29Canjil019.6	1	4	4	4	4	4	4	4	4	4	4							
NA	Canjilon Creek above Abiquiu Reservoir at US 84 - 29Canjil006.2	NA		4		4		4		4		4							Added mid-survey for TMDL development.
8	Canones Creek at first CR 194 crossing upstream of HWY 96 - 29CanonA003.4	2	2	2	2	2	2	2	2	2	2	2							
9	Canones Creek at HWY 96 - 29CanonA001.7	2	2	5	2	5	2	5	2	5	2	5							Sampled more for lake TMDL development
10	Canones Creek above HWY 84 (near Chama) - 29CanonB002.4	1	4	4	4	4	4	4	4	4	4	4							
12	CHAVEZ CREEK AT HWY 512 ABOVE THE RIO BRAZOS - 29Chavez000.1	2	2	2	2	2	2	2	2	2	2	2							
14	Clear Creek at FR 76 - 29ClearC000.1	2	2	2	2	2	2	2	2	2	2	2							
15	Coyote Creek at FR 316 - 29Coyote003.8	1	4	2	4	2	4	2	4	2	4	2							Observed as dry 6/13/24, 6/25/24, 10/2/24
16	El Rito Creek above El Rito - 29ElRito025.4	1	4	4	4	4	4	4	4	4	4	4							
17	El Rito Creek on FS 7 miles blw El Rito - 29ElRito008.6	1	4	4	4	4	4	4	4	4	4	4							

Map #	Station Name	Priority	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-volatile Organics		Radionuclides		Comments
Planned/Completed			P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
18	HERON LAKE DEEP DAM - 29HeronLDpDam	L	4	4	4	4	4	4	4	4	4	4	2	1	2	2	2	2	Zooplankton sampled twice to refine nutrient lake thresholds. VOC preservative left behind. Additional boat trip deemed unnecessary.
19	HERON LAKE SHALLOW - 29HeronLakeSH	L	4	4	4	4	4	4	4	4	4	4	2	1	2	2	2	2	Zooplankton sampled twice to refine nutrient lake thresholds. VOC preservative left behind. Additional boat trip deemed unnecessary.
20	HOPEWELL - 29HopewellLk	L	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
#	Nabor Creek 5 yards upstream of Rio Chamita - 29NaborC000.1	1	4	4	4	4	4	4	4	4	4	4							
22	Placer Creek at NM 64 - 29Placer005.1	2	4	4	4	4	4	4	4	4	4	4							
23	Placer Creek above Box - 29Placer001.0	2	4	4	4	4	4	4	4	4	4	4							
25	Poleo Creek at FR 103 - 29PoleoC009.5	2	2	2	2	2	2	2	2	2	2	2							
26-1	Polvadera Creek at FR 27 (CR 195) - 29Polvad000.8	1	4	4	4	4	4	4	4	4	4	4							
27	RIO BRAZOS ABOVE U.S. HIGHWAY 84 BRIDGE - 29RBrazo001.6	1	4	4	4	4	4	4	4	4	4	4							
28	Rio Capulin above Cecilia Canyon Creek - 29RCapul010.3	1	4	4	4	4	4	4	4	4	4	4							
29	Rio Chama above Abiquiu Reservoir at USGS gage - 29RChama079.5	1 IO	4	6	4	6	4	6	4	6	4	6							Sampled more for lake TMDL development
30	Heron Lake outfall - 29HeronOutfall	IO	4	0	4	0	4	0	4	0	4	0							Did not sample due to addition of 29RChama137.0 & 137.5, which were added b/c impairments.

Map #	Station Name	Priority	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-volatile Organics		Radionuclides		Comments
Planned/Completed			P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
31-1	Rio Chama abv El Vado - 29RChama137.0	1	4	4	4	4	4	4	4	4	4	4							
NA	Rio Chama abv Heron Lake outfall - 29RChama137.5	NA		4		4		4		4		4							Added mid-survey due to Rio Chama impairments
32	Rio Chama at NM 17 - 29RChama183.4	1	4	4	4	4	4	4	4	4	4	4							
32-1	Rio Chama below Hwy 285 - 29RChama007.7	1	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
34	Rio Chama at Hwy 554 - 29RChama038.3	1	4	4	4	4	4	4	4	4	4	4							
34-1	Rio Chama below Abiquiu Dam at USGS 08287000 gage - 29RChama050.4	1	4	5	4	5	4	5	4	5	4	5	2	2	2	2	2	2	Sampled more for lake TMDL development
35	Rio Chama Below Chama Town - 29RChama174.0	1	4	4	4	4	4	4	4	4	4	4							
38	Rio Chama below Rito de Tierra Amarilla above gage 08284100 - 29RChama147.0	1	4	4	4	4	4	4	4	4	4	4							
39-1	Rio Chamita at NM 29 - 29RChami008.3	1	4	4	4	4	4	4	4	4	4	4							
NA	Rio Chamita Below Sixto Creek u/s of Sixto Creek - 29RChami018.4			3		3		3		3		2							Added mid-survey for ONRW designation. One E. coli sample lost due to equipment malfunction. Observed dry on 9/10/24.
40	Rio Chamita below Chama WWTP outfall - 29RChami002.7	2	4	4	4	4	4	4	4	4	4	4							
42-1	Rio del Oso immed u/s of CR 456 crossing - 29RioOso010.7	1	4	2	4	2	4	2	4	2	4	2							1 PCB sample collected. Station replaced with Rio del Oso abv RC for safety

Map #	Station Name	Priority	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-volatile Organics		Radionuclides		Comments
Planned/Completed			P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
NA	Rio del Oso above Rio Chama - 29RioOso004.7	NA		4		4		4		4		4							4 PCB samples collected. Station added to survey as safer access to stream.
43	Rio Gallina at FR 76 - 29RGalli045.1	2	4	4	4	4	4	4	4	4	4	4							
44	Rio Gallina at confluence with Rio Chama - 29RGalli000.5	1	4	1	4	1	4	1	4	0	4	1							Site observed as dry 6/4/24, 6/13/24, 10/2/24. Unable to complete DM sample b/c high turbidity prevented filtration.
45	Rio Nutrias abv Rio Chama - 29RNutri005.4	2	4	4	4	4	4	4	4	4	4	4							
46	Rio Nutrias at US 84 - 29RNutri028.4	2	4	5	4	5	4	5	4	5	4	5							
47	Rio Ojo Caliente at Hwy 414 at Hot Springs bridge - 29ROjoCa026.1	1	4	5	4	5	4	5	4	5	4	4							
47-1	Rio Ojo Caliente d/s of Ojo Caliente WWTF - 29ROjoCa025.5	2	2	2	2	2	2	2	2	2	2	2							
48	Rio Puerco de Chama at CR 211 - 29RPuerc011.0	1	4	8	4	8	4	7	4	7	4	8							Sampled more for lake TMDL development
49	Rio Puerco de Chama at FR 103 - 29RPuerc037.5	1	4	4	4	4	4	4	4	4	4	4							
50	Rio Tusas at forest service boundary - 29RTusas001.9	1	4	4	4	4	4	4	4	4	4	4							
51	Rio Vallecitos 8.4 miles above Vallecitos at river crossing - 29RValle030.5	1	4	4	4	4	4	4	4	4	4	4							

Map #	Station Name	Priority	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-volatile Organics		Radionuclides		Comments
Planned/Completed			P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
52	Rio Vallecitos abv Rio Ojo Caliente - 29RValle000.1	1	4	4	4	4	4	4	4	4	4	4							
53	Rito Tierra Amarilla at Hwy 64 - 29RTierr026.1	1	4	4	4	4	4	5	4	5	4	4							
54	RITO TIERRA AMARILLA AT THE HWY 112 BRIDGE ABOVE - 29RTierr000.7	1	4	5	4	5	4	4	4	4	4	5							
55	Rito Encino at FR 100Z - 29REncin009.7	2	1	4	1	4	1	4	1	4	1	4							Sampled more for lake TMDL development
56	Rito Resumidero at FR 93 * 29RResum002.5	2	1	4	1	4	1	4	1	4	1	4							
57	Rito Resumidero below Resumidero Spring - 29RResum001.9	2	1	2	1	2	1	2	1	2	1	2							
58	Sixto Creek above Rio Chamita - 29SixtoC000.1	1	4	4	4	4	4	4	4	4	4	4							
59	Willow Creek abv Heron Lake - 29Willow000.1	1	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	

	TDS/TSS		Nutrients (Low P)		Total Metals		Dissolved Metals		E. coli		Volatile Organics		Semi-Volatile Organics		Radionuclides	
Planned/Completed	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C
Sampling Totals	187	211	187	211	187	210	187	209	187	209	16	14	16	16	16	16
Percent Completed	112.8%		112.8%		112.3%		111.8%		111.8%		87.5%		100.0%		100.0%	

Table 2. Summary of Long-Term Deployment, Biological and Physical Habitat Sampling

Map #	Station Name	Sonde/DO/Cond		Thermograph		Flow		Physical Habitat		Chlorophyll a		Phytoplankton		Microcystins		Fish		Comments
Planned/Completed		P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
1	Abiquiu Creek at US 84 bridge - 29Abiqui001.8	D	1			4	4	1	1									
2	ABIQUIU RESERVOIR AT THE DAM - 29AbiquiuRDam									4	4	4	4	4		1	1	Lab unable to complete microsystin analysis
3	ABIQUIU RESERVOIR CHAMA R INLET - 29AbiqReInlet					4	0											No flow measurements b/c site is in lake.
6	Canjilon Creek 5 miles N. of Echo Amp - 29Canjil019.6	S	1	1	1	4	5	1	1									Incomplete temp data. Thermograph lost most likely due to theft.
8	Canones Creek at first CR 194 crossing upstream of HWY 96 - 29CanonA003.4	S	1	1	1	2	2	1	1									Incomplete temp data. Thermograph lost most likely due to flood.
10	Canones Creek above HWY 84 (near Chama) - 29CanonB002.4	D	1	1	1	4	5	1	1									
15	Coyote Creek at FR 314 - 29Coyote003.8					4	5	1	0									No physical habitat b/c site was dry.
14	El Rito Creek above El Rito - 29ElRito025.4			1	1	4	5	1	1									
17	El Rito Creek on FS 7 miles blw El Rito - 29ElRito008.6	S	1			4	5											DO logger deployed instead of sonde due to impairment being for nutrients and risk of expensive equipment being stolen.
18	HERON LAKE DEEP DAM - 29HeronLDpDam									4	4	4	4	4			1	Lab unable to complete microsystin analysis. Fish sampling done as part of fish consumption advisory as resources became available.
19	HERON LAKE SHALLOW - 29HeronLakeSH									4	4	4	4	4			1	Lab unable to complete microsystin analysis. Fish sampling done as part of fish consumption advisory as resources became available. Fish were sampled for PFAS.
20	HOPEWELL - 29HopewellLk									4	4	4	4	4				Lab unable to complete microsystin analysis.
21	Nabor Creek 5 yards upstream of Rio Chamita - 29NaborC000.1					4	4	1	1									

Map #	Station Name	Sonde/DO/Cond		Thermograph		Flow		Physical Habitat		Chlorophyll a		Phytoplankton		Microcystins		Fish		Comments
Planned/Completed		P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
22	Placer Creek at NM 64 - 29Placer005.1	D	1	1	1	4	5	1	1									
23	Placer Creek above Box - 29Placer001.0			1	1	4	5	1	1									
25	Poleo Creek at FR 103 - 29PoleoC009.5	D	1	1	1	4	2	1	1									FSP only planned for 2 water chemistry sampling events. Requiring 4 flow measurements likely a mistake.
24-1	Polvadera Creek at FR 27 (CR 195) - 29Polvad000.8			1	1	4	4	1	0									Unable to complete physical habitat measurements due to access constraints. 29Polvad002.5 was added for physical habitat in same AU.
NA	Polvadera Creek at USFS- 29Polvad002.5								1									
27	RIO BRAZOS ABOVE U.S. HIGHWAY 84 BRIDGE - 29RBrazo001.6	D	1	1	1	4	4	1	1									
28	Rio Capulin above Cecilia Canyon Creek - 29RCapul010.3			1	1	4	4	1	1									Incomplete temp data. Thermograph lost most likely due to theft.
29	Rio Chama above Abiquiu Reservoir at USGS gage - 29RChama079.5	D	1	1	1	4	6											
31-1	Rio Chama abv El Vado - 29RChama137.0 5	D	1	1	1	4	6											
32	Rio Chama at NM 17 * 29RChama183.4	D	1	1	1	4	5	1	1									
32-1	Rio Chama below Hwy 285 - 29RChama007.7	D	1	1	1													Incomplete temp data. Thermograph lost most likely due to theft.
34	Rio Chama at Hwy 554 - 29RChama038.3	S	1			4	5											DO logger deployed instead of sonde due to risk of expensive equipment being stolen at high traffic site.
34-1	Rio Chama below Abiquiu Dam at USGS 08287000 gage - 29RChama050.4			1	1	4	5											

Map #	Station Name	Sonde/DO/Cond		Thermograph		Flow		Physical Habitat		Chlorophyll a		Phytoplankton		Microcystins		Fish		Comments
Planned/Completed		P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
38	Rio Chama below Rito de Tierra Amarilla above gage 08284100 - 29RChama147.0	D	1	1	1	4	5	1	0									Physical habitat measurements not done b/c reach would have been >700m. Determined too difficult to complete.
39-1	Rio Chamita at NM 29 - 29RChami008.3			1	1	4	4											
40	Rio Chamita below Chama WWTP outfall - 29RChami002.7	D	1	1	1	4	4											
42-1	Rio del Oso immed u/s of CR 456 crossing - 29RioOso010.7			1	0	4	2	1	0									Thermograph was deployed at 29RioOso004.7. No physical habitat b/c station location was changed to 29RioOso004.7.
NA	Rio del Oso above Rio Chama - 29RioOso004.7				1		6											Incomplete temp data. 2 thermographs lost to floods.
43	Rio Gallina at FR 76 - 29RGalli045.1	D	1	1	1	4	4											
44	Rio Gallina at confluence with Rio Chama - 29RGalli000.5	D	1	1	0	4	4	1	1									Could not deploy thermograph b/c site was dry.
45	Rio Nutrias abv Rio Chama - 29RNutri005.4	D	1			4	4	1	1									
46	Rio Nutrias at US 84 - 29RNutri028.4	D	1			4	5											
47	Rio Ojo Caliente at Hwy 414 at Hot Springs bridge - 29ROjoCa026.1	D	1			4	5											
48	Rio Puerco de Chama at CR 211 - 29RPuerc011.0	S	1	1	1	4	8	1	1									DO logger deployed instead of sonde due to impairment being for nutrients and temperature and risk of expensive equipment being stolen.
49	Rio Puerco de Chama at FR 103 - 29RPuerc037.5					4	4											
50	Rio Tusas at forest service boundary - 29RTusas001.9	D	1	1	1	4	4	1	1									

Map #	Station Name	Sonde/DO/Cond		Thermograph		Flow		Physical Habitat		Chlorophyll a		Phytoplankton		Microcystins		Fish		Comments
Planned/Completed		P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
50	Rio Tusas at forest service boundary - 29RTusas001.9	D	1	1	1	4	4	1	1									
51	Rio Vallecitos 8.4 miles above Vallecitos at river crossing - 29RValle030.5			1	1	4	4	1	1									
52	Rio Vallecitos abv Rio Ojo Caliente - 29RValle000.1	D	1	1	1	4	4	1	1									
53	Rito Tierra Amarilla at Hwy 64 - 29RTierr026.1			1	1	4	6	1	1									
54	RITO TIERRA AMARILLA AT THE HWY 112 BRIDGE ABOVE - 29RTierr000.7	S	1	1	1	4	5	1	1									
55	Rito Encino at FR 100Z - 29REncin009.7					4	4	1	1									
57	Rito Resumidero below Resumidero Spring - 29RResum001.9					1	2	1	1									
58	Sixto Creek above Rio Chamita - 29SixtoC000.1			1	1	4	4											
59	Willow Creek abv Heron Lake - 29Willow000.1					4	5	1	0									Could not conduct physical habitat measurements because site is on private property where staff are escorted by State Parks staff.

	Sonde/DO/Cond		Thermograph		Flow		Physical Habitat		Chlorophyll a		Phytoplankton		Microcystins		Fish	
Planned/Completed	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C
Sampling Totals	25	25	29	28	159	184	28	23	16	16	16	16	16	0	1	3
Percent Completed	100.0%		96.6%		115.7%		82.1%		100.0%		100.0%		0.0%		300.0%	