

## USE ATTAINABILITY ANALYSIS

### AQUATIC LIFE USES FOR PERENNIAL REACHES OF STREAMS IN THE GALISTEO WATERSHED

#### INTRODUCTION

The perennial reaches of Galisteo Creek and its perennial tributaries in Santa Fe County are currently classified in segment 121 in New Mexico's *Standards for Interstate and Intrastate Surface Waters* (NMAC 2012):

**20.6.4.121 RIO GRANDE BASIN - Perennial tributaries to the Rio Grande in Bandelier national monument and their headwaters in Sandoval county and all perennial reaches of tributaries to the Rio Grande in Santa Fe county unless included in other segments and excluding waters on tribal lands.**

**A. Designated Uses:** domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact; and public water supply on Little Tesuque creek, the Rio en Medio, the Santa Fe river and Cerrillos reservoir.

**B. Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300  $\mu\text{S}/\text{cm}$  or less; the monthly geometric mean of *E. coli* bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

The applicable temperature criteria are 4T3 temperature 20°C (68°F) and maximum temperature 23°C (73°F) (20.6.4.900 H (1) NMAC).

Galisteo Creek is currently listed on the 303d list as impaired for the high quality coldwater aquatic life use due to temperature and specific conductance exceedences (NMED/SWQB 2012a). It was first listed prior to 1998 for stream bottom deposits, reduction of riparian vegetation and stream bank destabilization. The stream was intensively surveyed in 2001 and assessed in 2004. As a result of the assessment, the stream bottom deposits listing was removed and the temperature and specific conductance listings were added. Galisteo Creek was placed in Category 5B which means that the designated<sup>1</sup> use may not be existing<sup>2</sup> or attainable<sup>3</sup> and that the water quality standards for the water body may need to be revised (NMED/SWQB 2012b).

A designated aquatic life use (that is not an existing use) may be removed or changed to a use with less stringent criteria only if a Use Attainability Analysis (UAA) demonstrates that the use is not attainable due to one or more of six factors listed in 40 CFR 131.10 (g) (**Appendix A**). High quality coldwater is the most stringent aquatic life use in New Mexico's water quality standards (WQS); proposed changes to a less stringent use requires a UAA.

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<sup>1</sup> "Designated" means a use specified in 20.6.4.9-899 (20.6.4.7 NMAC).

<sup>2</sup> "Existing" means any use attained in the water body since Nov 28, 1975 (20.6.4.7 NMAC).

<sup>3</sup> "Attainable" means achievable through effluent limitations and best management practices (20.6.4.7 NMAC)

The purpose of this UAA is to determine the most protective aquatic life use(s) attainable in perennial reaches of Galisteo Creek, as well as perennial reaches of its tributaries. The UAA presents: 1) a watershed description, 2) a data review, 3) an ecoregion analysis and 4) modeling of attainable water temperatures. Maps and photos are contained in **Appendix B**. A map of locations referred to in this UAA is shown in **Appendix B, Figure B1**.

The UAA demonstrates that the **high quality coldwater** aquatic life use is attainable in perennial reaches of Galisteo Creek and perennial reaches of its tributaries in the upper watershed. These reaches are appropriately classified in 20.6.4.121 and no change is needed. The UAA also demonstrates that **coolwater** is the most protective aquatic life use attainable in the middle and lower portions of the watershed. The high quality coldwater aquatic life use is *not* attainable in the middle and lower watershed because of 40 CFR 131.10 (g)(1): "naturally occurring pollutant concentrations prevent the attainment of the use...." (**Appendix A**). Thermal pollution (heat), in this case, is naturally occurring due to ambient air temperatures.

### WATERSHED DESCRIPTION

The Galisteo watershed is located east of the Rio Grande in north-central New Mexico. It is part of the U.S. Geological Survey (USGS) Rio Grande-Santa Fe hydrologic unit (hydrologic unit code or HUC13020201) in the Upper Rio Grande basin. The watershed covers 730 sq. miles south of Santa Fe, mainly in Santa Fe County, with small parts in Sandoval and San Miguel counties (**Appendix B, Figure B2**).

The upper watershed is located in the southern tip of the Sangre de Cristo Mountains and contains the highest point in the watershed at 10,554 feet. High gradient headwater streams including Apache Canyon and Deer creek join Galisteo Creek near Cañoncito at an elevation of 6800 feet. From this point, streams are lower gradient as they enter the middle and lower watershed. The middle watershed includes the areas of Lamy, Galisteo village and San Cristobal Arroyo. Many tributaries join Galisteo Creek downstream of the village of Galisteo, including San Cristobal, Los Angeles, La Jara, Cunningham, and San Marcos Arroyos. The lower watershed includes Madrid, Cerrillos and the Kewa Pueblo<sup>4</sup>. A small part extends into the Ortiz Mountains. Galisteo Creek enters the Rio Grande at an elevation of 5,180 feet. The total length of the Galisteo Creek mainstem is 53 miles. The last 10 miles above the confluence with the Rio Grande are located within the boundaries of Kewa (Santo Domingo) pueblo. Stream flows vary throughout the watershed and may be perennial, intermittent or ephemeral.

Geology, groundwater aquifers and vegetation in the watershed are shown in **Appendix B, Figures B3 - B5**. The main geologic groups are volcanic in the upper watershed, alluvium (sediment) in the middle and lower watershed, and sandstone-shale- mudstone in the eastern watershed. Vegetation types vary from conifer forests in the upper watershed to wood-, shrub- and grasslands in the middle and lower watershed.

The Galisteo watershed has been settled for centuries, and impacted by many land and water uses. A Watershed Restoration Action Strategy (WRAS) was formulated in 2005 by Earth Works Institute (EWI) under a 319 grant to address erosion, water table draw down, and erosive

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<sup>4</sup> Waters on the Kewa pueblo are not surface waters of the state.

flooding (EWI 2005). A Wetlands Action Plan was completed in 2010 (NMED/SWQB, EWI 2010). There is one NPDES permitted facility in the watershed: LAC Minerals is permitted to discharge into Cunningham Creek, an ephemeral tributary in the lower watershed. Water supply for residents in the watershed is currently provided by numerous wells. Cerrillos Reservoir impounds a spring on San Marcos Arroyo for a public water supply (M. Medina, email Feb 2008). Overall, groundwater recharge in the watershed is less than withdrawals and thus the water table is lowering (Stephens 2003). In an interagency report on the watershed, the Office of the State Engineer (OSE) reported no current irrigation diversions (EMNRD 2008).

## DATA REVIEW

### *New Mexico Environment Department (NMDED) Surveys*

In 2001, NMED surveyed Galisteo Creek at Cerrillos, CR 55A, Galisteo village and Canoncito; and San Cristobal Arroyo (NMED/SWQB 2004). For this UAA, NMED collected data from the previously surveyed sites in Cerrillos, CR 55A, Galisteo, and Canoncito; plus Apache Canyon and an additional site in Canoncito (**Appendix B, Figure B1**).

### *Water quality data*

NMED collects and analyzes data for a number of water quality parameters. Detailed water quality data are contained in **Appendix C**. Sondes are used for single-visit<sup>5</sup> or extended data collection for temperature, pH, specific conductance, dissolved oxygen and turbidity. Macroinvertebrate population data collected in 2001 indicated that Galisteo Creek was no longer impaired for stream bottom deposits (sediment) (see Introduction, p. 1).

NMED temperature data are included in **Table 4** and **Appendix C**. Single-visit sonde temperature measurements provide a snapshot but usually not a large enough data set to fully characterize the water body. NMED uses thermographs for a more comprehensive record. Thermographs measure air or water temperatures continuously over several months and are usually deployed throughout the summer. NMED has four sets of water thermograph data: Galisteo Creek in Galisteo village (2003, 2010), Galisteo Creek in Canoncito (2012) and Apache Canyon (2011). A thermograph was deployed at each survey site in 2001 but all were lost in flood events (N. Schaeffer, email communication 2003).

### *Hydrology*

Isolated perennial reaches occur throughout the watershed. These reaches have no flow immediately upstream, indicating that they are sustained by groundwater input. Perennial reaches on Galisteo Creek occur in the areas of Waldo, Cerrillos, County Road 55A, Galisteo village and Cañoncito. Other perennial reaches occur on San Cristobal Arroyo (public comments), Apache Canyon and Deer Creek (Vrooman 2006). As part of the UAA investigation, NMED applied the hydrology protocol (NMED/SWQB 2011) at several locations (see Figure B1). Results are shown in **Appendix D**.

USGS data are available for eight gauges in the watershed, as shown in **Appendix E**. Over 30 years of daily data for Domingo (1941-71) and below Galisteo Dam (1970-current) show 73% and 53% respectively of all days were zero flow days. The gauge above Galisteo Reservoir near

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<sup>5</sup> Single samples are also referred to as grab, discrete or instantaneous samples.

Waldo shows six years of perennial low flow. Only annual peak flow data are available for the remaining six gauges, which are insufficient to illustrate the overall hydrology.

NMED also reviewed aerial photos (RGIS 2011) and the Google Earth application which showed flow in several tributaries<sup>6</sup>.

### *Aquatic life*

Waters in the Galisteo watershed have been described as a fishery resource. Kewa Pueblo tradition states that until the mid-19<sup>th</sup> century trout (a coldwater fish), catfish (a warmwater fish) and turtles were all regularly caught for food along the mainstem. More recently, biological surveys conducted in Apache Canyon and Deer Creek identified native trout (B. Salter, email communication 2010). A landowner in Cañoncito recently had a New Mexico Department of Game and Fish (NMDGF) permit to stock trout, some of which reportedly still inhabit the upper watershed (T. Sigstedt, personal communication 2011). NMED conducted electrofishing in 2001 at each of three perennial reaches of Galisteo Creek at Cerrillos, CR 55A and Galisteo village. At each location, only flathead chub (*Platygobio gracilis*) were collected (see Appendix C). Flathead chub is native to the Rio Grande basin, and prefers an intermediate water temperature (NMDGF 2012). NMED commissioned a search of historical records from the Museum of Southwestern Biology (UNM 2010) and several other databases (G. Schiffmiller, email communication 2010) but no additional fish records were found.

## ECOREGION ANALYSIS

Ecoregions (Griffith et al., 2006) are large geographic areas of similar ecosystems. Each ecoregion is characterized by its elevation, air temperature, precipitation, terrain, geology, soils, vegetation and fauna. A Roman numeral hierarchical scheme from I to IV is used for increasing levels of ecological detail. Level III is denoted by a number and level IV is denoted by a letter. Ecoregions describe the great diversity of the natural landscape in New Mexico, which includes forested mountains, semiarid shrub- and grass-covered plains, glaciated peaks, woodland- and shrubland-covered hills, lava fields and volcanic plateaus, river floodplains, and arid deserts. Detailed descriptions of all ecoregions in New Mexico are in **Appendix F**.

Maps showing the ecoregions and NMED stream assessment units of the Upper Rio Grande basin and the Galisteo watershed are shown in **Appendix B, Figures B6 and B7**. The characteristics of ecoregions containing Segment 121 and the Galisteo watershed are summarized in **Table 1**. The Upper Rio Grande basin is contained mostly in ecoregions 21 (Southern Rockies) and 22 (Arizona/New Mexico Plateau). Ecoregion 21 contains the highest elevations and the lowest air temperatures in the Upper Rio Grande basin. These conditions support forests and alpine vegetation. Streams in this ecoregion are mostly high gradient perennial streams with rocky substrates. Stream assessment units with the high quality coldwater and coldwater (shown in blue), including segment 121 (shown in purple) occur mainly in ecoregion 21. Ecoregion 21d represents a transition between 21 and 22.

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<sup>6</sup> Dates provided on this imagery refers to the date that Google purchased the imagery and not to the date of the photo (Z. Stauber, email June 2012).

The Galisteo watershed is in the southernmost part of the basin, mostly in ecoregions 22 and 26 (Southwestern Tablelands). Ecoregions 22 and 26 are lower elevation and warmer and consist mainly of low mountains, hills, slopes, mesas and canyons. Natural vegetation is mainly woodland, shrubland, savannah and grassland. Streams are mostly intermittent or ephemeral. Due to the soils of these ecoregions, streams are more likely to have sandy substrates. Marginal coldwater and coolwater (green), warmwater (orange) assessment units, and most of Galisteo Creek occur mainly in ecoregion 22. A small portion of the southwestern Galisteo watershed in the Ortiz Mountains is contained in ecoregion 23, which is warmer and drier than other mountain ecoregions.

The number of miles and percentages of each segment 121 stream occurring in each ecoregion is shown in **Table 2**. By far, most segment 121 streams are in the forested, mountainous ecoregion 21. The headwaters of the Galisteo watershed are in ecoregions 21c and the transitional ecoregion of 21d. Most of the watershed is in ecoregions 22 and 26, where natural conditions are warmer and drier. The thermograph that led to the temperature listing of Galisteo Creek was located well within ecoregion 22, ten miles from ecoregion 21. Significantly, Galisteo Creek is the only stream in segment 121 impaired for temperature.

The lower Rio Quemado and the upper Santa Cruz assessment units in segment 121 are contained entirely in ecoregion 22h. Although unimpaired for temperature, a closer look at these systems is warranted. The Rio Quemado is divided into two segments at a political rather than hydrologic boundary; most of this river is actually in ecoregion 21. The Santa Cruz River assessment unit is a 1-mile section just below ecoregion 21. Both the Rio Quemado and the Santa Cruz River are influenced by cool canyon-bound upstream flow originating in ecoregion 21.

Segment 121 specifically excludes Rio Grande tributaries "classified in other segments." Several such tributaries<sup>7</sup> are classified in segments 113 or 114 with the marginal coldwater aquatic life use. Like Galisteo Creek, these streams are contained well within ecoregion 22. Unlike Galisteo Creek, these streams are meeting their temperature criteria.

In summary, the forested, mountainous ecoregion 21 contains Apache Canyon, Deer Creek, most of the waters in segment 121, and many other high quality coldwater streams. The warmer and drier ecoregions 22 and 26 contain most of the Galisteo watershed. The fundamental natural differences between the Galisteo watershed and other segment 121 streams ultimately affect water temperatures and attainable aquatic life uses. The naturally occurring ecoregion conditions described in this section indicate that the high quality coldwater aquatic life use is likely not appropriate or attainable for most of the Galisteo watershed.

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<sup>7</sup> Rio Tesuque, Pojoaque River, Cienega Creek, lower Santa Cruz River, and lower Santa Fe River.

**Table 1. Ecoregions containing segment 121 assessment units and the Galisteo watershed (based on Griffith et al. 2006)**

Code	Name	Primary Vegetation	Land Cover	Physiography	Hydrology	July Ave Air Temp	Min Elev	Max Elev	Galisteo Watershed	Other Segment 121
21	Southern Rockies									
21a	Alpine Zone	alpine	rock, meadow, forest	High mountains with steep slopes, ridges, and exposed rocky peaks above timberline.	Some wetlands and glacial lakes. High gradient headwater streams with boulder, cobble, and bedrock substrates.	15.8	11,000	13,161		X
21b	Crystalline Subalpine Forests	spruce, fir, aspen	forest	High mountains with steep slopes.	High gradient headwater streams with boulder, cobble, and bedrock substrates.	16.0	9,000	11,500		X
21c	Crystalline Mid-Elevation Forests	ponderosa pine, fir, aspen	forest	Low mountain ridges, slopes, and outwash fans.	Moderate to high gradient perennial streams with boulder, cobble, and bedrock substrates.	17.5	7,600	10,100	X	X
21d	Foothill Woodlands and Shrublands	pinon-juniper	wood, shrub	Hills, ridges, and footslopes. Transitions into Ecoregion 22.	Moderate to high gradient perennial, intermittent, and ephemeral streams with cobble, gravel, and sandy substrates.	19.7	6,000	8,500	X	X
21h	Volcanic Mid-Elevation Forests	ponderosa pine, fir, aspen	forest	Low mountain ridges, slopes, and outwash fans.	Moderate to high gradient perennial streams with boulder, cobble, and bedrock substrates.	17.5	7,500	10,000		X
22	Arizona/New Mexico Plateau									
22h	North Central New Mexico Valleys and Mesas	pinon-juniper	wood, shrub, grass	Mesas, valleys, piedmont slopes, deep canyons, a few scattered hills.	Some perennial and many intermittent streams from surrounding mountain ecoregions.	21.7	5,300	8,052	X	X
23	Arizona/New Mexico Mountains									
23c	Montane Conifer Forests	ponderosa pine, oak	forest	Open low mountains and high mountains with steep slopes, numerous canyons.	Mostly moderate to high gradient intermittent and some perennial streams with bedrock, cobble, gravel, and sandy substrates.	18.9	7,000	9,600	X	
23e	Conifer Woodlands and Savannas	pinon-juniper	wood, shrub, grass	High hills and low mountains, numerous canyons.	Mostly moderate to high gradient intermittent streams with bedrock, cobble, gravel, and sandy substrates; a few perennial rivers.	20.1	6,000	9,220	X	
26	Southwestern Tablelands									
26h	Pinyon-Juniper Woodlands and Savannas	pinon-juniper	wood, shrub, grass	Dissected plains and tablelands with some scattered ridges and hills.	Mostly intermittent streams and some perennial streams that are spring-fed or that originate in mountain ecoregions.	21.6	5,000	8,720	X	

**Table 2. Miles/percent of segment 121 AU s per Ecoregion**

Stream	21a	21b	21c	21d	21h	22h	total stream mi	% in 21	% in 22
Alamo Canyon				7.1	6.7	0.9	14.7	94%	6%
Capulin Creek				8.2	3.1	1.7	13	87%	13%
Galisteo Ck (Perennial reaches above Kewa Pueblo boundary)				8.4		33.2	41.6	20%	80%
Little Tesuque Creek		1.5	3.9	2.8		0.1	8.3	99%	1%
Medio Creek				5.1		1.1	6.2	82%	18%
North Fork Tesuque Creek	0.5	1.7					2.2	100%	0%
Rio Chupadero (USFS boundary to headwaters)			2.3				2.3	100%	0%
Rio Frijoles (Rio Medio to Pecos Wilderness)		3.7	6.4	2.2		1.5	13.8	89%	11%
Rio Medio	0.3	3.1	9.5	2.1		2.4	17.4	86%	14%
Rio Nambe (Nambe Pueblo boundary to headwaters)	1.5	1.3	5.6				8.4	100%	0%
Rio Quemado (Santa Cruz River to Rio Arriba Countyboundary)						3.8	3.8	0%	100%
Rio en Medio (Aspen Ranch to headwaters)		0.8	0.2				1	100%	0%
Rio en Medio (non-pueblo lands Pojoaque River to Aspen Ranch)			4	1.1		1	6.1	84%	16%
Rito de los Frijoles (Rio Grande to Upper Crossing)				6.7	0.9	0.4	8	95%	5%
Rito de los Frijoles (Upper Crossing to headwaters)					6		6	100%	0%
Santa Cruz River (Santa Cruz Reservoir to Rio en Medio)						1	1	0%	100%
Santa Fe River (Nichols Reservoir to headwaters)	0.5	5.4	5.8				11.7	100%	0%
South Fork Tesuque Creek		1					1	100%	0%
Tesuque Creek		1.2	3.3	2.3			6.8	100%	0%

## WATER TEMPERATURE MODELING

The six aquatic life use subcategories and associated temperature criteria for New Mexico’s surface waters are listed in **Table 3**.

**Table 3. Aquatic Life Use Temperature Criteria °C**

Criterion	High Quality Coldwater	Coldwater	Marginal Coldwater	Coolwater	Warmwater	Marginal warmwater
4T3	20	-	-	-	-	-
6T3	-	20	25	-	-	-
TMAX	23	24	29	29	32.2	32.2

New Mexico’s aquatic life temperature criteria are expressed as 4T3, 6T3 and TMAX, EPA (1972) recommends chronic temperature criteria based on the maximum weekly average temperature (MWAT). TMAX is the maximum temperature, 4T3 is the 4-hour maximum temperature that occurs for 3 consecutive days, 6T3 is the 6-hour maximum temperature that occurs for 3 consecutive days, and MWAT is the maximum seven-day running average temperature. The reference data is the first date that the measurement occurs. These statistics are derived from water thermograph measurements.

For many surface waters in New Mexico, the maximum weekly average temperature (MWAT) is nearly equal to the July average air temperature at that location (NMED/SWQB 2012). July average air temperatures for any geographic coordinate location within the continental United States may be modeled using PRISM (<http://www.prism.oregonstate.edu>). NMED recently developed a correlation model using PRISM air temperatures (ATEMP) to predict TMAX, 4T3 and 6T3 on July 15<sup>8</sup> for water bodies without thermograph data (NMED/SWQB 2012). The following formulae are used:

$$\begin{aligned}
 \text{MWAT} &= \text{ATEMP} \\
 \text{TMAX} &= 1.07 * \text{ATEMP} + 4.95 \\
 \text{4T3} &= 1.06 * \text{ATEMP} + 1.82 \\
 \text{6T3} &= 1.03 * \text{ATEMP} + 1.30
 \end{aligned}$$

The effect of air temperatures on aquatic life uses may be generalized as follows:

- high quality and coldwater uses may be attainable if ATEMP is  $\leq 18^{\circ}\text{C}$ ;
- marginal coldwater and coolwater uses may be attainable if ATEMP is  $\leq 23^{\circ}\text{C}$ ;
- warmwater may be the most restrictive use attainable if ATEMP is  $> 23^{\circ}\text{C}$ .

Surface water influenced by cold springs, microclimates or groundwater will be cooler than predicted by this model (NMED/SWQB 2012c). For such water bodies, the actual measured MWAT will be *less* than PRISM, and the difference may be used to estimate the cooling influence of the groundwater at that location.

<sup>8</sup> The model uses July 15 as a reference date on which the highest annual temperature typically occurs.



NMED applied the air-water correlation model to ten locations within the watershed, shown in **Table 4**. Available thermograph data show measured MWAT to be an average of 2.05 °C cooler than the predicted MWAT from PRISM data. This number was subtracted from the predicted TMAX, 4T3, 6T3 and MWAT at each location to estimate groundwater cooling effects.

**Table 4. Water temperatures**

LOCATION	REFERENCE DATE	TMAX	4T3	6T3	MWAT	PRISM
<b>Galisteo Creek @ Domingo</b>						
Predicted		29.9	26.5	25.3	23.3	23.3
Predicted w groundwater		27.9	24.5	23.3	21.3	
<b>Galisteo Creek below Galisteo Dam</b>						
Predicted		29.3	25.9	24.7	22.8	22.8
Predicted w groundwater		27.3	23.9	22.7	20.7	
<b>Galisteo Creek @ Cerrillos</b>						
Predicted		29.0	25.6	24.4	22.5	22.5
Predicted w groundwater		26.9	23.6	22.4	20.4	
<b>Galisteo Creek @ CR 55A</b>						
Predicted		28.6	25.2	24.1	22.1	22.1
Predicted w groundwater		26.5	23.2	22.0	20.1	
<b>Galisteo Creek @ Galisteo village</b>						
Thermograph	7/25/03	29.0	24.8	22.0	20.0	21.7
Thermograph	7/20/10	29.7	24.8	22.6	19.0	21.7
Predicted		28.1	24.8	23.6	21.7	
Predicted w groundwater		26.1	22.7	21.5	19.6	
<b>San Cristobal Creek</b>						
Predicted		27.6	24.3	23.1	21.2	21.2
Predicted w groundwater		25.6	22.2	21.1	19.2	
<b>Galisteo Creek @ Cañoncito (JC)</b>						
Predicted		26.5	23.2	22.1	20.2	20.2
Predicted w groundwater		24.5	21.2	20.0	18.1	
<b>Galisteo Creek @ Cañoncito (TS)</b>						
Thermograph June-July (interim upload)	7/20/12	23.6	18.7	17.8	16.9	20.1
Thermograph June-Sept	9/3/12	25.0	22.1	20.8	19.1	20.4
Predicted		26.7	23.4	22.3	20.4	
Predicted w groundwater		24.7	21.3	20.2	18.3	
<b>Deer Creek</b>						
Predicted		24.6	21.3	20.2	18.4	18.4
Predicted w groundwater		22.5	19.2	18.2	16.3	
<b>Apache Canyon</b>						
Thermograph	7/22/11	17.5	15.8	15.4	14.4	17.1
Predicted		23.2	19.9	18.9	17.1	
Predicted w groundwater		21.2	17.9	16.9	15.1	

## DISCUSSION

PRISM air temperatures and predicted water temperatures at Domingo and at Galisteo dam are the highest in the watershed. Domingo is on the Kewa pueblo and the reach is not included in New Mexico's water quality standards. Galisteo Creek above and below the dam is ephemeral and no thermograph data are available. Predicted temperatures for any perennial reaches that may exist, adjusted for the likely event of groundwater influence, meet marginal coldwater or coolwater.

Air and water temperatures in Apache Canyon and Deer Creek are the lowest in the watershed. Thermograph measurements at Apache Canyon meet the high quality coldwater criteria, and predicted temperatures at Deer Creek meet high quality coldwater where groundwater influenced. The characteristics of the mountain and foothill ecoregions in which these streams occur support this aquatic life use. Public comments stated that resident trout populations may exist in these streams. High quality coldwater aquatic life is appropriate for perennial streams in the upper watershed including Apache Canyon and Deer Creek. These reaches are already classified in segment 121 and do not need to be reclassified.

Galisteo Creek at Cerrillos, and one mile above CR 55A, are perennial reaches sustained by groundwater. San Cristobal Creek is a major tributary of Galisteo Creek in the middle watershed. These locations do not have thermograph data. Predicted temperatures meet the marginal coldwater and coolwater criteria with or without groundwater influence. Galisteo Creek in the village of Galisteo is a perennial reach sustained by groundwater. Predicted temperatures here also meet the coolwater and marginal coldwater criteria with or without groundwater influence, although the thermograph TMAX slightly exceeded ( $<1^{\circ}\text{C}$ ) the criteria. Resident flathead chub species identified in these waters have intermediate temperature preferences. The characteristics of the xeric ecoregions where these streams occur, plus the cooling influence of groundwater, support the coolwater and marginal coldwater aquatic life uses.

The Cañoncito area located within a transitional zone between the middle and upper watershed, in a foothills ecoregion where different types of geology, soils, vegetation, topography and elevation converge. Air and water temperatures reflect this transition. NMED sampled two Cañoncito area sites approximately 1 mile apart: Cañoncito 1 at JC residence, and Cañoncito 2 at TS residence where a thermograph was deployed in 2012. Predicted temperatures at both locations meet coolwater and marginal coldwater with or without considering groundwater influence. Interim data uploaded in July exceeded the high quality coldwater criteria but met the coldwater criteria (see Appendix C). The thermograph was retrieved in mid-September and the complete dataset analyzed. Compared to the interim upload, the complete dataset exhibited unusually high temperatures and large diel temperature swings characteristic of a thermograph exposed to air, suggesting that this reach went dry during the 2012 midsummer drought. NMED censored 623 data points (July 24 to Aug 18) and calculated the statistics from the remaining 1782 points. The results exceed high quality coldwater, slightly exceed ( $=1^{\circ}\text{C}$ ) coldwater, and

meet coolwater and marginal coldwater. High quality coldwater is probably not attainable for the Cañoncito area, but coldwater may be attainable, especially in pools. By contrast, other locations analyzed clearly exhibit the attainable aquatic life use of coolwater and marginal coldwater. Finally, complete water quality surveys have not yet been conducted in the Cañoncito area. Therefore NMED proposes to reclassify only the reaches downstream of Cañoncito. The proposed segment break is located 2.2 miles upstream of Lamy, as shown in **Figures B8 - B10 (Appendix B)**. An arroyo from the west joins Galisteo Creek at coordinates -105.858807 and 35.5077693. A railroad bridge crosses this arroyo immediately above the confluence with Galisteo Creek. The location is marked by a benchmark at 6610 feet.

Definitions of coolwater and marginal coldwater from New Mexico Water Quality Standards are:

“Coolwater” in reference to an aquatic life use means the water temperature and other characteristics are suitable for the support or propagation of aquatic life whose physiological tolerances are intermediate between and may overlap those of warm and coldwater aquatic life.

"Marginal coldwater" in reference to an aquatic life use means that natural intermittent or low flows, or other natural habitat conditions severely limit maintenance of a coldwater aquatic life population or historical data indicate that the temperature in the surface water of the state may exceed 25°C (77°F).

Marginal coldwater describes habitat that would otherwise be coldwater, but is limited by habitat conditions such as low flow. Coolwater describes habitat that is naturally intermediate between cold and warm, regardless of flow. Therefore “coolwater” is the best description of the attainable use in the middle and lower watershed.

## CONCLUSION

The Galisteo watershed is a complex hydrological and geological system, coupled with a long history of human use and impacts. Watershed degradation, groundwater withdrawals and natural conditions all affect the water quality, quantity and the attainable aquatic life use. Nonetheless, surface water temperatures are ultimately limited by natural ambient air temperatures.

NMED therefore proposes that perennial reaches downstream of the confluence of Galisteo Creek and the unnamed arroyo as described above, be reclassified into a new segment with the coolwater aquatic life use. All other uses and criteria from segment 121 should be retained except for the specific conductance criterion, which applies only to the high quality coldwater aquatic life use.

## REFERENCES

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**APPENDIX A**  
**UAA FACTORS**

40 CFR 131.10(g):

(g) States may remove a designated use which is not an existing use, as defined in Sec. 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

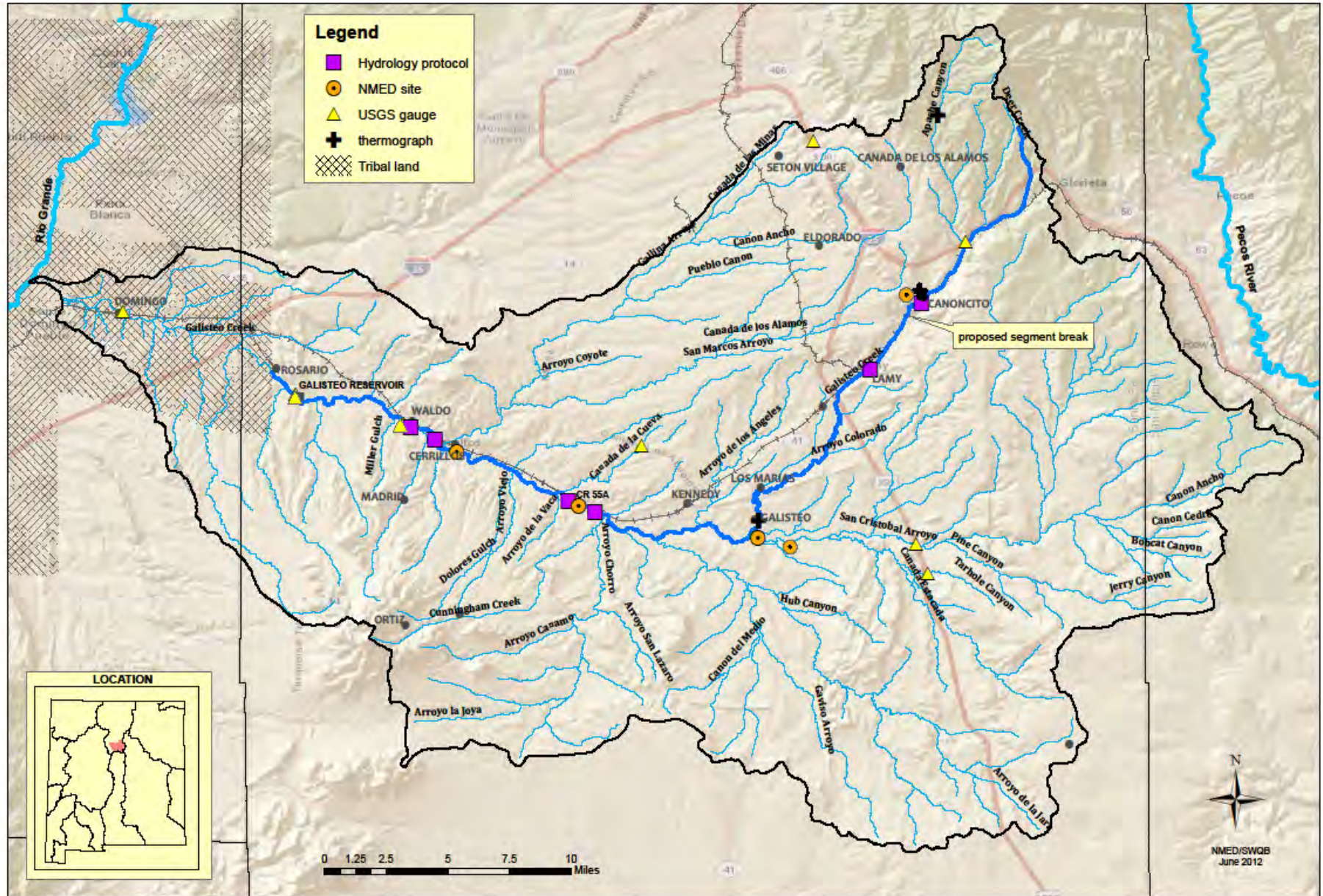
(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

(4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

# APPENDIX B MAPS AND PHOTOS

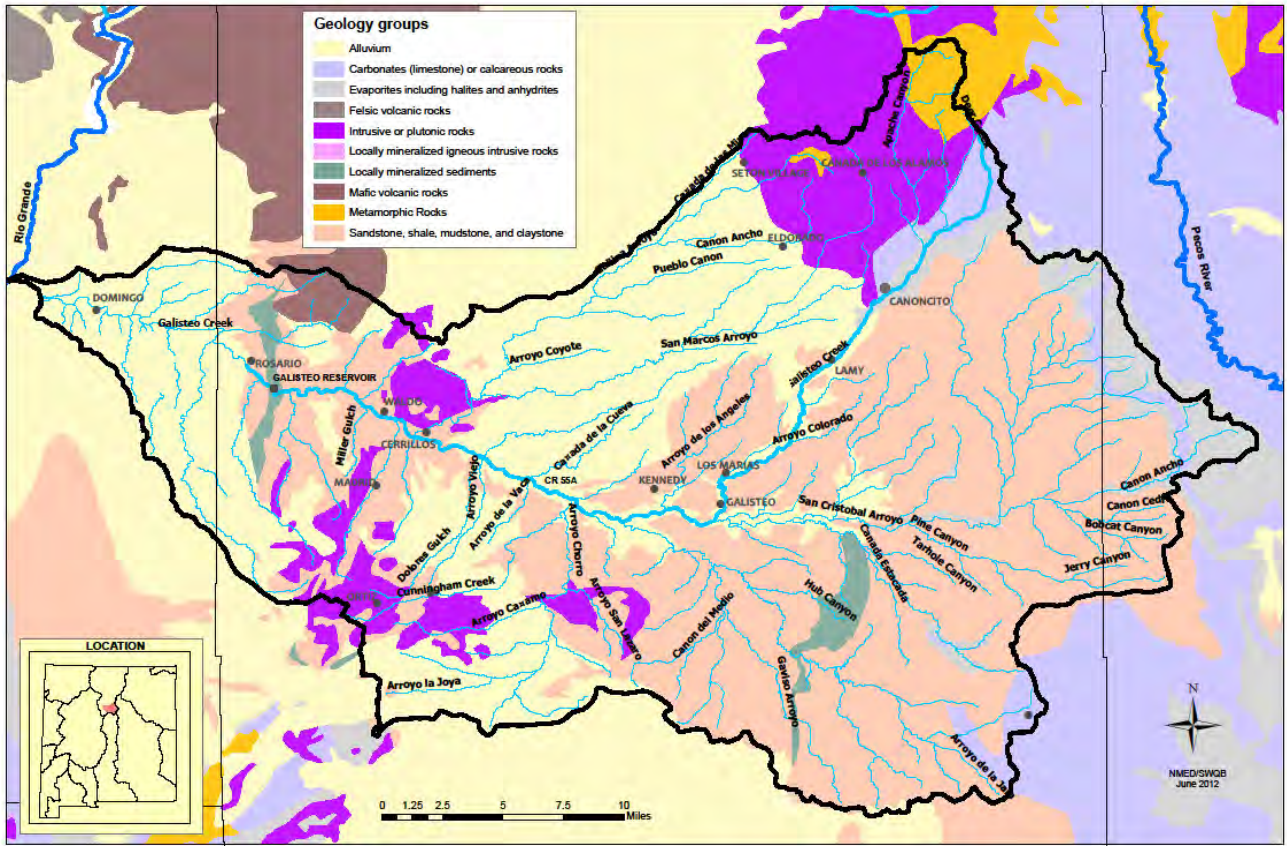


B1. Locations referred to in UAA

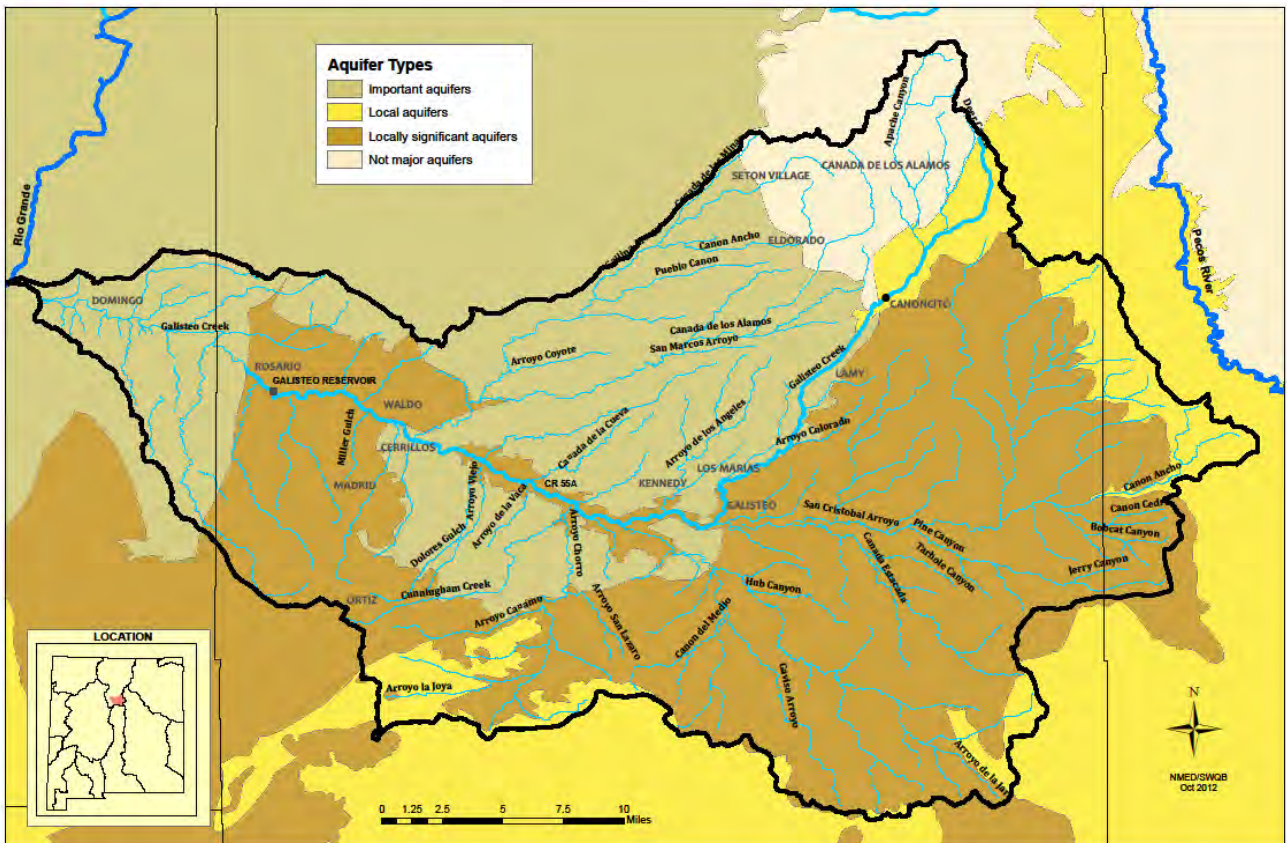


**B2. Overview of the Upper Rio Grande basin and Galisteo Watershed**

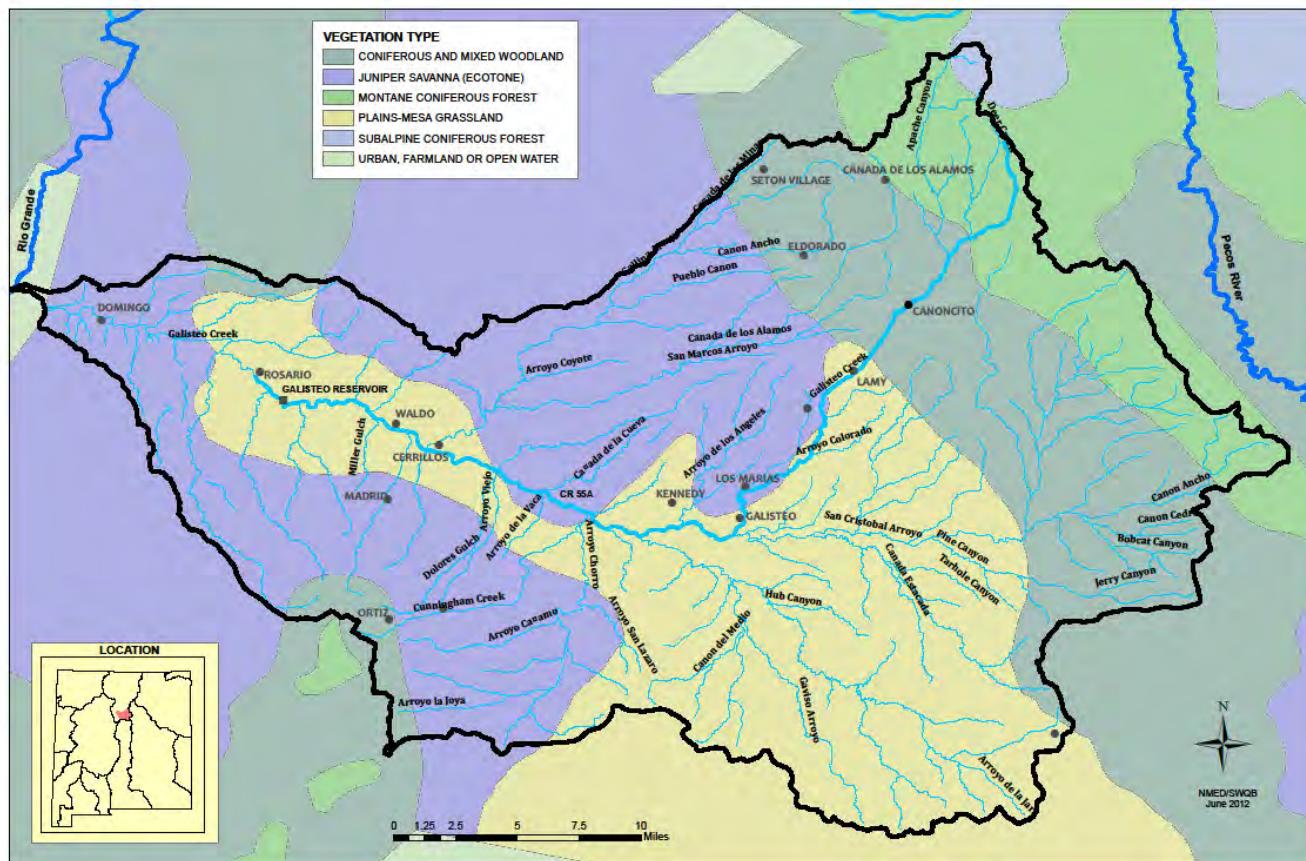




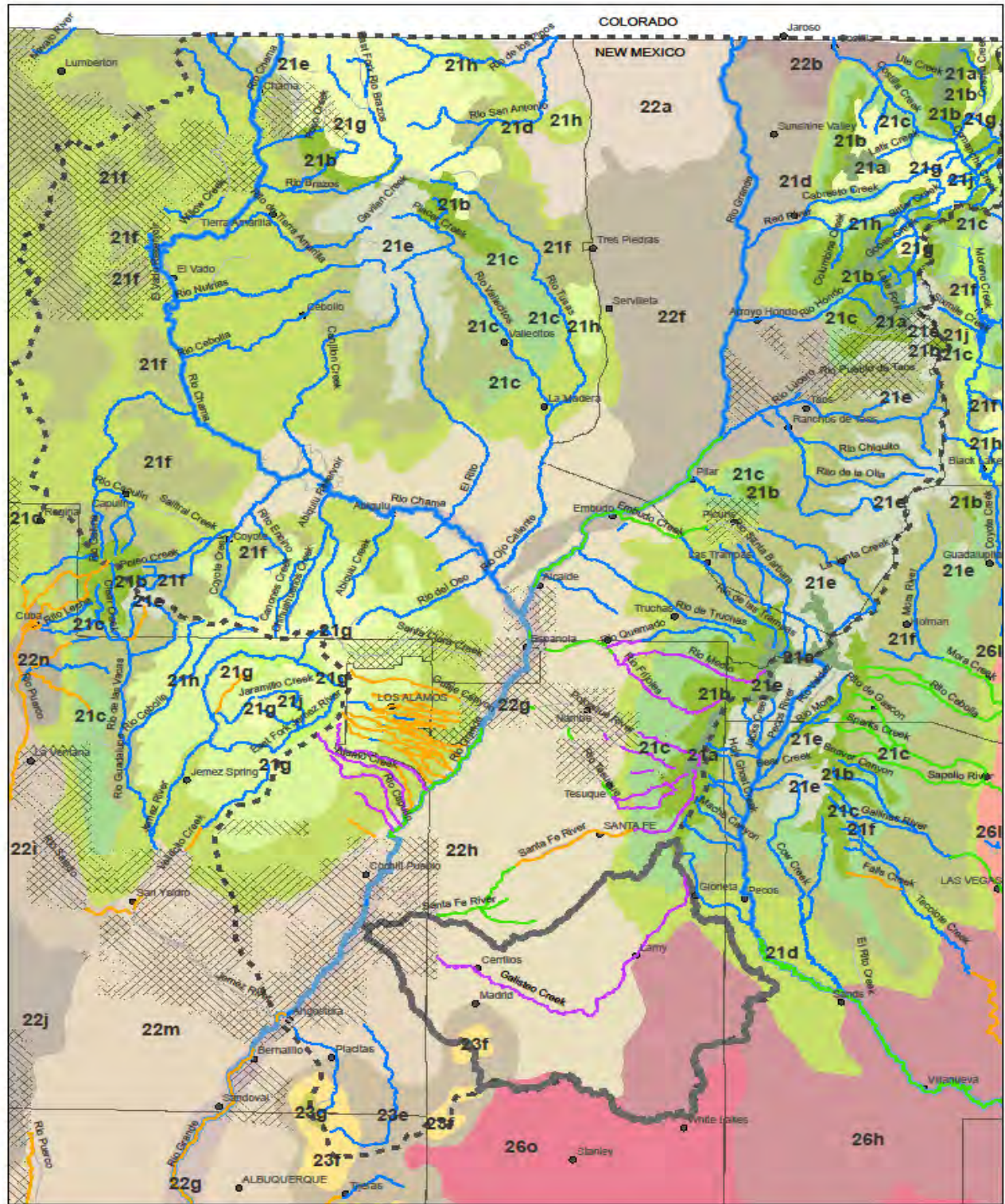
B3. Geology



B4. Aquifers



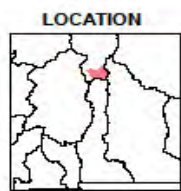
**B5. Vegetation**



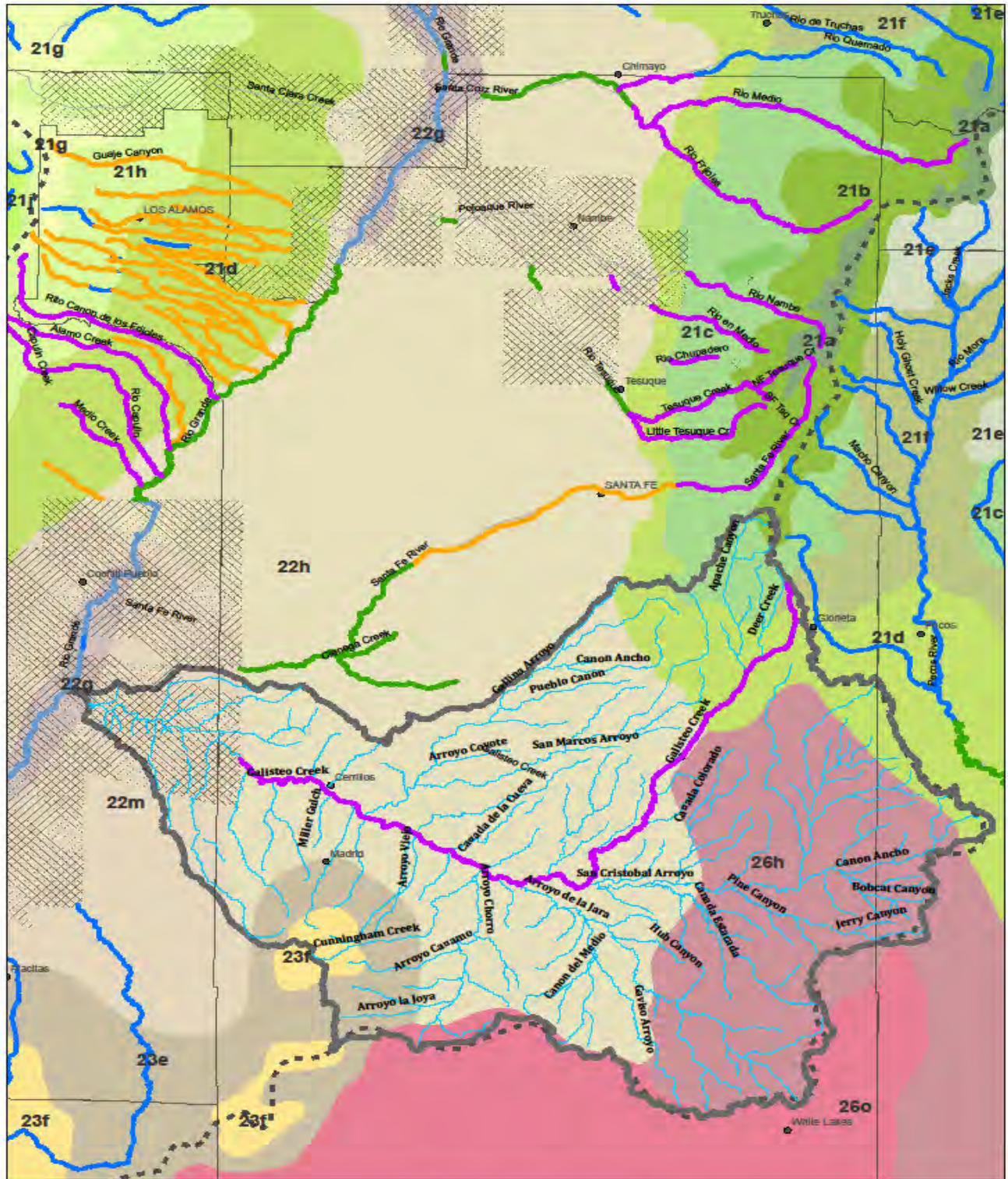
- Legend**
- segment 121 assessment units
  - marginal coldwater and coolwater
  - warmwater, marginal warmwater and limited
  - high quality coldwater and coldwater
  - Tribal land
  - Galisteo watershed



NMED/SWOB  
Oct 2012

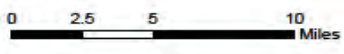


**B6. Ecoregions and assessment units of the Upper Rio Grande basin map**

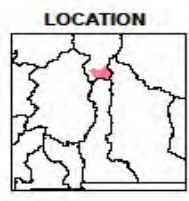


**Legend**

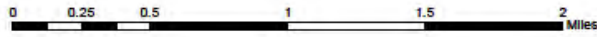
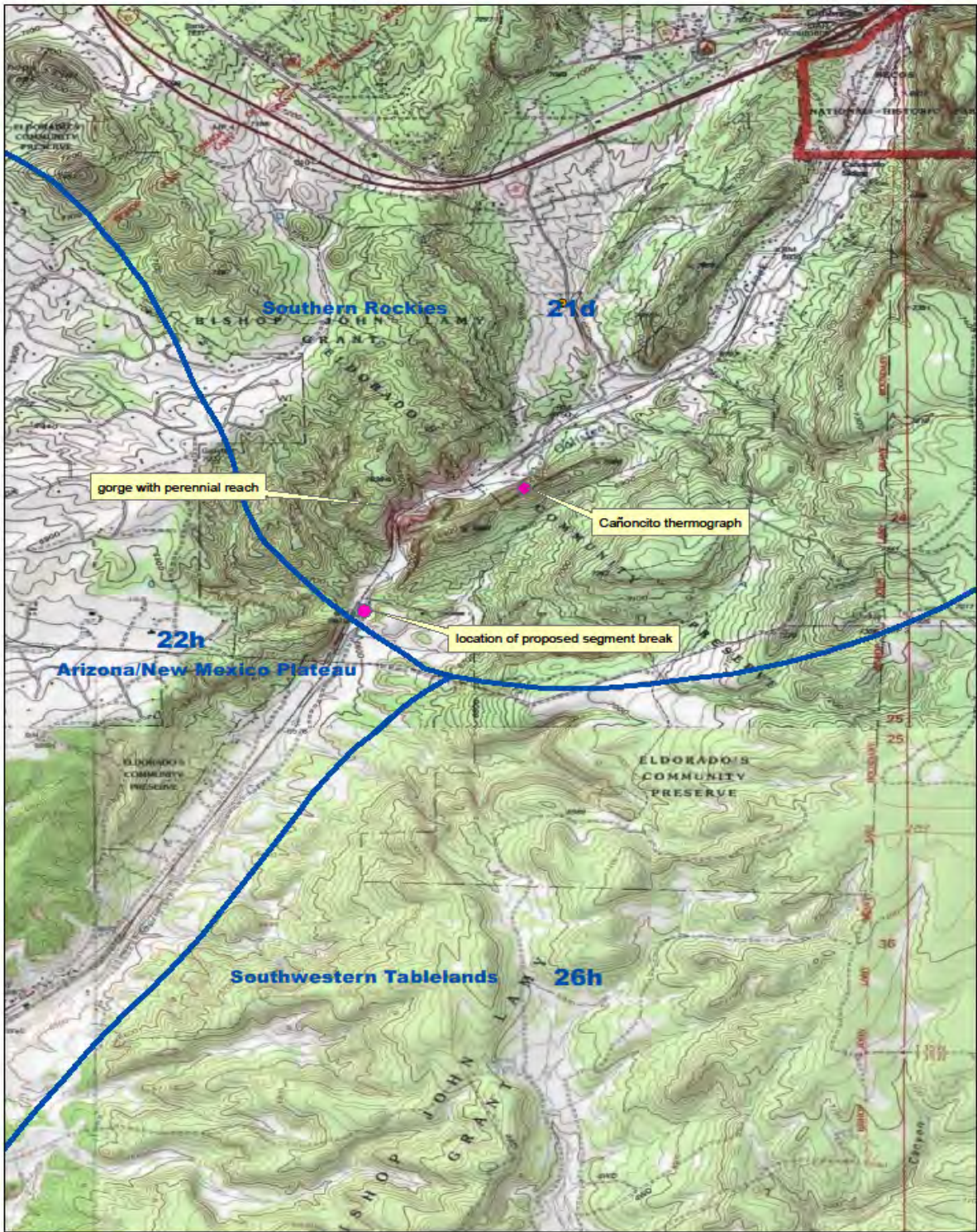
- segment 121 assessment units
- marginal coldwater and coolwater
- warmwater, marginal warmwater and limited
- high quality coldwater and coldwater
- Galisteo watershed
- Tribal land



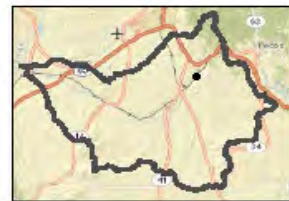
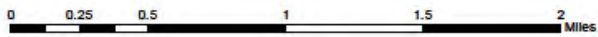
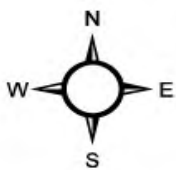
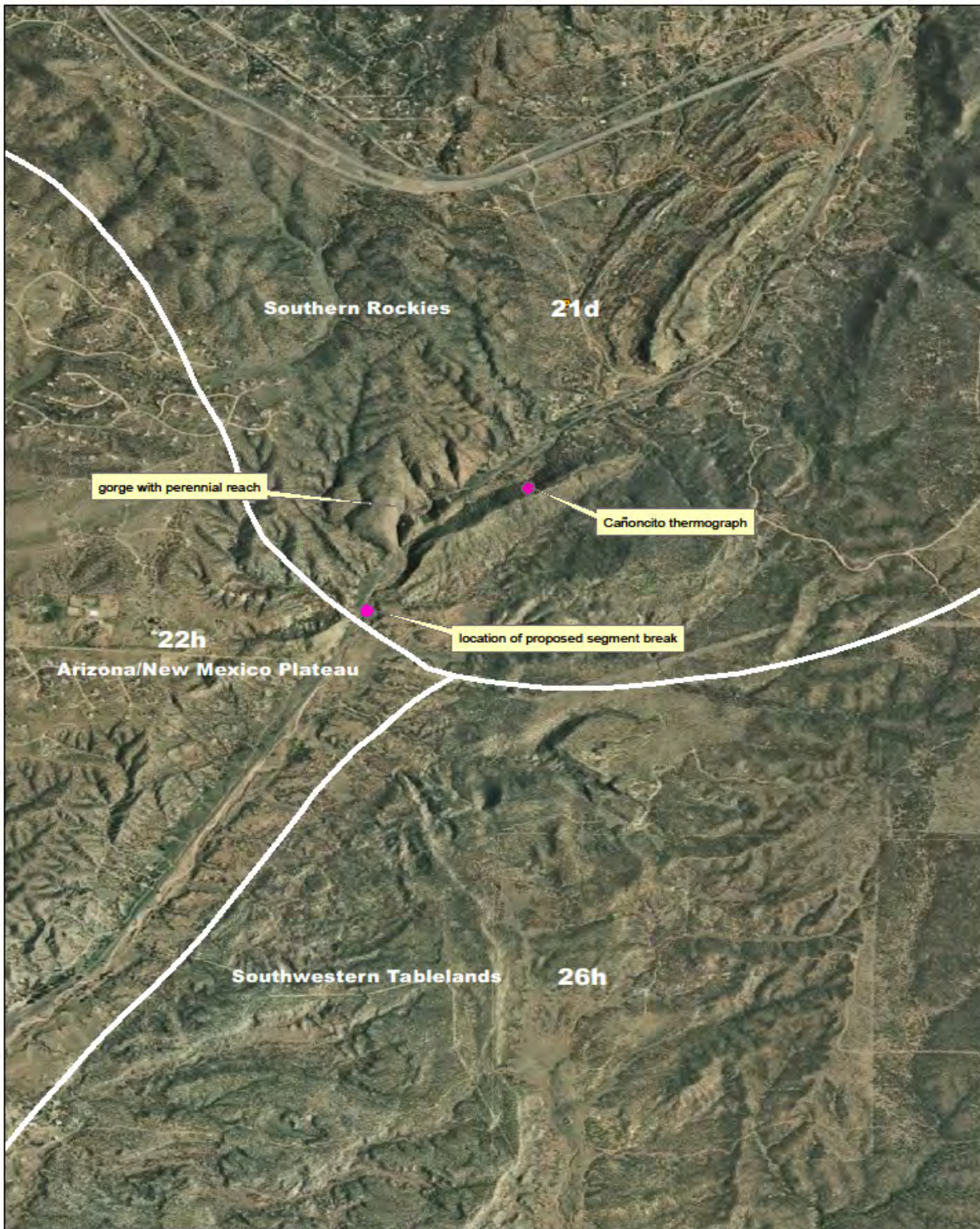
NMED/SWQB  
Oct 2012



**B7. Ecoregions and assessment units of the Galisteo watershed map**



**B8. Map of proposed segment break location**



**B9. Aerial photo of proposed segment break location**



**B10. Proposed segment break location**



**B11. Galisteo Creek view upstream from dam.**



**B12. Galisteo Creek channel incised below I-25.**



**B13. Galisteo Creek at NM 14 in Cerrillos. April 2010.**





**B14. Galisteo Creek near CR 55A**



**B15. Galisteo Creek in Galisteo village. April 2010.**



**B16. Galisteo Creek in Cañoncito (site 1). April 2010.**



**B17. Galisteo Creek in Cañoncito (site 2). June 2012.**



**B18. Apache Canyon**



**B19. San Cristobal Arroyo at NM 285. June 2012**

**APPENDIX C  
NMED WATER QUALITY DATA**

**Table C1. Single samples**

LOCATION	DATE	pH	SC	TEMP	DO	DO sat	TURB	DATA SOURCE
Apache Canyon	7/22/2011	8.2	173	14.80	7.4	96.0	2.50	NMED
Galisteo Creek above dam	6/28/74 0:00			24.00				USGS
Galisteo Creek above Rio Grande	6/30/1995 1345	8.4	550	20.00	3.4	36.9		NM Dept of Health and Environment
Galisteo Creek above Rio Grande	8/23/1995 1525	8.0	465	28.50	6.3	79.8		NM Dept of Health and Environment
Galisteo Creek at Richardson property above CR 55A	5/24/2001 10:00	8.2	1563	19.35	8.5	92.2		NMED
Galisteo Creek at Richardson property above CR 55A	11/6/2003 9:00	6.8	1209	11.85	9.6	115.0	7.70	NMED
Galisteo Creek at Richardson property above CR 55A	4/27/2010 12:40	8.2	1467	21.97	7.0	103.9	9.20	NMED
Galisteo Creek at Domingo	8/3/61 0:00			30.00				USGS
Galisteo Creek at Domingo	8/4/63 0:00			25.60				USGS
Galisteo Creek at Domingo	7/19/66 0:00			21.10				USGS
Galisteo Creek at Domingo	7/17/67 0:00			20.00				USGS
Galisteo Creek at Domingo	8/14/68 0:00			27.00				USGS
Galisteo Creek at Domingo	8/23/69 0:00			24.00				USGS
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001 10:25	8.2	1639	18.60	9.1	98.0		NMED
Galisteo Creek at Hwy 14 near Cerrillos	5/23/2001 11:17	8.2	1562	21.87	7.9	90.0		NMED
Galisteo Creek at Hwy 14 near Cerrillos	5/24/2001 9:40	8.1	1103	18.28	8.1	86.4		NMED
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001 10:40	8.2	385	19.01	7.8	84.3		NMED
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001 10:25	7.9	1576	19.33	7.2	78.7	0.98	NMED
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003 10:20	7.4	1290	13.66	9.8	123.0	0.00	NMED
Galisteo Creek at Hwy 14 near Cerrillos	4/27/2010 11:30	8.2	1517	19.74	7.2	103.0	34.20	NMED
Galisteo Creek below dam	8/20/71 0:00			25.50				USGS
Galisteo Creek below dam	7/10/72 0:00			31.50				USGS
Galisteo Creek below dam	8/31/73 0:00			26.50				USGS
Galisteo Creek below dam	8/6/74 0:00			29.00				USGS
Galisteo Creek below dam	7/15/75 0:00			30.00				USGS
Galisteo Creek below dam	8/27/76 0:00			29.00				USGS
Galisteo Creek below dam	8/15/77 0:00			28.00				USGS
Galisteo Creek below dam	8/11/78 0:00			24.00				USGS
Galisteo Creek below dam	8/17/79 0:00			19.00				USGS
Galisteo Creek in Galisteo	5/22/2001 12:20	8.1	505	21.74	7.3	83.4		NMED
Galisteo Creek in Galisteo	5/23/2001 8:10	8.0	432	11.36	8.1	74.1	3.61	NMED
Galisteo Creek in Galisteo	5/24/2001 12:20	8.1	591	22.60	7.3	85.1	3.22	NMED
Galisteo Creek in Galisteo	8/14/2001 13:10	8.0	312	24.68	6.6	79.8		NMED
Galisteo Creek in Galisteo	8/15/2001 11:45	8.1	615	23.40	6.8	80.4	9.80	NMED
Galisteo Creek in Galisteo	9/25/2001 11:20	8.1	619	17.34	7.3	76.4	3.91	NMED

LOCATION	DATE	pH	SC	TEMP	DO	DO sat	TURB	DATA SOURCE
Galisteo Creek in Galisteo	9/26/2001 10:50	7.9	588	16.04	7.4	74.9	1.76	NMED
Galisteo Creek in Galisteo	9/27/2001 10:15	8.0	564	14.49	7.6	74.7	4.33	NMED
Galisteo Creek in Galisteo	11/5/2003 14:00	7.3	551	15.36	8.2	106.3	0.00	NMED
Galisteo Creek in Galisteo	4/27/2010 14:00	8.2	727	21.36	7.0	102.6	9.10	NMED
Galisteo in Canoncito JC residence	4/27/2010 14:00	8.4	319	19.70	7.4	104.6	16.40	NMED
Galisteo in Canoncito TS residence	3/28/2012 15:50	nd	766	17.30	8.5	112.0	-2.60	NMED
San Cristobal Creek at Hwy 41	5/22/01 11:41	7.2	4840	17.06	6.1			NMED
San Cristobal Creek at Hwy 41	5/23/01 9:10	8.3	4884	13.94	5.4		8.25	NMED
San Cristobal Creek at Hwy 41	5/24/01 11:40	7.9	5119	21.35	6.4		4.63	NMED
San Cristobal Creek at Hwy 41	8/14/01 13:50	8.1	357	20.59	8.3			NMED
San Cristobal Creek at Hwy 41	8/15/01 12:10	8.2	549	18.63	8.1		667	NMED

**Table C2. Lab analysis**

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Alkalinity	190	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Bicarbonate	231	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Calcium	125	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Carbonate	0	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Chloride	28.2	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Fluoride	0.97	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Hardness	494	mg/L CaCO3	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Magnesium	44.1	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Potassium	5	mg/l	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Sodium	1	mg/l	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Sulfate	629	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Total Dissolved Solids	1200	mg/l	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Total Suspended Solids	3	mg/l	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Total Kjehldal Nitrogen	0.136	mg/L	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Aluminum	0.02	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Antimony	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Arsenic	0.001	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Barium	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Beryllium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Boron	0.2	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Cadmium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Calcium	150	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Chromium	0.001	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Cobalt	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Copper	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Iron	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Lead	0.001	mg/L	TRUE	Metals (total, full suite)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Magnesium	44	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Manganese	0.032	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Mercury	0.0002	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Molybdenum	0.005	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Nickel	0.01	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Selenium	0.005	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Silicon	7.4	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Silver	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Strontium	1.8	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Thallium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Tin	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Uranium-234/235/238	0.011	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Vanadium	0.002	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Zinc	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Aluminum	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Antimony	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Arsenic	0.001	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Barium	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Beryllium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Boron	0.2	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Cadmium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Calcium	150	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Chromium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Cobalt	0.001	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Copper	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Iron	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Lead	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Magnesium	46	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Manganese	0.03	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Molybdenum	0.006	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Nickel	0.01	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Selenium	0.005	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Silicon	7.5	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Silver	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Strontium	1.8	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Thallium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Tin	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Uranium-234/235/238	0.011	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Vanadium	0.003	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	5/22/2001	Zinc	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Alkalinity	211	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Bicarbonate	257	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Calcium	141	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Carbonate	0	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Chloride	25.5	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Hardness	531	mg/L CaCO3	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Magnesium	43.4	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Potassium	5	mg/L	TRUE	Ions (full suite)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Sodium	153	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Sulfate	593	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Total Dissolved Solids	1160	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Total Suspended Solids	3	mg/L	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Aluminum	0.03	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Antimony	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Arsenic	0.002	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Barium	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Beryllium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Boron	0.3	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Cadmium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Calcium	150	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Chromium	0.002	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Cobalt	0.001	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Copper	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Iron	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Lead	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Magnesium	41	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Manganese	0.21	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Mercury	0.0002	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Molybdenum	0.006	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Nickel	0.01	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Selenium	0.005	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Silicon	8	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Silver	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Strontium	1.8	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Thallium	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Tin	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Uranium-234/235/238	0.009	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Vanadium	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Zinc	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Aluminum	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Antimony	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Arsenic	0.002	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Barium	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Beryllium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Boron	0.2	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Cadmium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Calcium	170	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Chromium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Cobalt	0.001	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Copper	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Iron	0.1	mg/L	TRUE	Metals (dissolved)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Lead	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Magnesium	45	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Manganese	0.21	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Molybdenum	0.006	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Nickel	0.01	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Selenium	0.005	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Silicon	8.8	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Silver	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Strontium	2.1	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Thallium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Tin	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Uranium-234/235/238	0.009	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Vanadium	0.002	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	9/25/2001	Zinc	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Alkalinity	112	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Bicarbonate	124	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	73.5	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Carbonate	12.2	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chloride	10	mg/L	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Hardness	229	mg/L CaCO3	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	11.1	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Potassium	5	mg/L	TRUE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Sodium	26.6	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Sulfate	115	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Suspended Solids	23000	mg/L	FALSE	Ions (full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Ammonia	0.103	mg/l	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nitrate + Nitrite (N)	0.45	mg/l	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Phosphorus, Total	6.29	mg/l	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Kjehldal Nitrogen	0.918	mg/l	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Organic Carbon	14.2	mg/l	FALSE	Nutrients (total)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Aluminum	300	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Antimony	0.001	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Arsenic	0.03	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Barium	6	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Beryllium	0.02	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Boron	10	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cadmium	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	870	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chromium	0.18	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cobalt	0.17	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Copper	0.3	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Iron	200	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Lead	0.25	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	160	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Manganese	11	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Mercury	0.0003	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Molybdenum	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nickel	0.5	mg/L	FALSE	Metals (total, full suite)



Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Selenium	0.005	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silicon	76	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silver	0.01	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Strontium	3	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Thallium	0.002	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Tin	0.1	mg/L	TRUE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Uranium-234/235/238	0.019	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Vanadium	0.2	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Zinc	0.7	mg/L	FALSE	Metals (total, full suite)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Aluminum	0.05	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Antimony	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Arsenic	0.001	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Barium	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Beryllium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Boron	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cadmium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	44	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chromium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cobalt	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Copper	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Iron	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Lead	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	7	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Manganese	0.002	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Molybdenum	0.003	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nickel	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Selenium	0.005	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silicon	4.1	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silver	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Strontium	0.5	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Thallium	0.001	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Tin	0.1	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Uranium-234/235/238	0.001	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Vanadium	0.007	mg/L	FALSE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Zinc	0.01	mg/L	TRUE	Metals (dissolved)
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Alkalinity	111	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Bicarbonate	121	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	76	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Carbonate	14.4	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chloride	10	mg/L	TRUE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Hardness	236	mg/L CaCO3	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	11.3	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Potassium	5	mg/L	TRUE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Sodium	26.6	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Sulfate	115	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Suspended Solids	22100	mg/L	FALSE	ions (full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Ammonia	0.1	mg/l	TRUE	Nutrients (total), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nitrate + Nitrite (N)	0.44	mg/l	FALSE	Nutrients (total), dup

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Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Phosphorus, Total	3.94	mg/l	FALSE	Nutrients (total), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Kjehldal Nitrogen	0.599	mg/l	FALSE	Nutrients (total), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Total Organic Carbon	11.8	mg/l	FALSE	Nutrients (total), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Aluminum	300	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Antimony	0.001	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Arsenic	0.03	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Barium	6	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Beryllium	0.02	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Boron	10	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cadmium	0.01	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	870	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chromium	0.15	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cobalt	0.15	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Copper	0.2	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Iron	210	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Lead	0.24	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	160	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Manganese	11	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Mercury	0.0003	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Molybdenum	0.01	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nickel	0.4	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Selenium	0.005	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silicon	68	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silver	0.01	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Strontium	3.1	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Thallium	0.003	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Tin	0.1	mg/L	TRUE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Uranium-234/235/238	0.019	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Vanadium	0.2	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Zinc	0.6	mg/L	FALSE	Metals (total, full suite), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Aluminum	0.12	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Antimony	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Arsenic	0.001	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Barium	0.1	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Beryllium	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Boron	0.1	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cadmium	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Calcium	44	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Chromium	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Cobalt	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Copper	0.01	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Iron	0.1	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Lead	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Magnesium	7	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Manganese	0.003	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Molybdenum	0.003	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Nickel	0.01	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Selenium	0.005	mg/L	TRUE	Metals (dissolved), dup

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silicon	4.5	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Silver	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Strontium	0.5	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Thallium	0.001	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Tin	0.1	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Uranium-234/235/238	0.001	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Vanadium	0.007	mg/L	FALSE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	8/14/2001	Zinc	0.01	mg/L	TRUE	Metals (dissolved), dup
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Alkalinity	211	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Bicarbonate	257	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Calcium	150	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Carbonate	0	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Chloride	21	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Fluoride	1.02	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Hardness	559	mg/L CaCO3	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Hardness (Ca & Mg)	559	mG/L CaCO3	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Magnesium	44.7	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Potassium	5	mg/L	TRUE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Sodium	170	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Sulfate	637	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Total Dissolved Solids	1190	mg/L	FALSE	Ions
Galisteo Creek at Hwy 14 near Cerrillos	11/6/2003	Total Suspended Solids	3	mg/L	TRUE	Ions
San Cristobal Creek at Hwy 41	5/22/2001	Alkalinity	179	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Bicarbonate	219	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Calcium	1	mg/l	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Carbonate	0	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Chloride	33.9	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Fluoride	0.59	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Hardness	6.6	mg/L CaCO3	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Magnesium	1	mg/l	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Potassium	5.04	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Sodium	1	mg/l	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Sulfate	3130	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Total Dissolved Solids	4720	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Total Suspended Solids	14	mg/l	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	5/22/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/22/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/22/2001	Phosphorus, Total	0.034	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/22/2001	Total Kjehldal Nitrogen	0.712	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/22/2001	Total Organic Carbon	7.04	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/24/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/24/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/24/2001	Phosphorus, Total	0.034	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/24/2001	Total Kjehldal Nitrogen	0.608	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/24/2001	Total Organic Carbon	9.04	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/15/2001	Calcium	82.7	mg/L	FALSE	Ions (TDS/TSS)
San Cristobal Creek at Hwy 41	8/15/2001	Hardness	253	mg/L CaCO3	FALSE	Ions (TDS/TSS)
San Cristobal Creek at Hwy 41	8/15/2001	Magnesium	11.3	mg/L	FALSE	Ions (TDS/TSS)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
San Cristobal Creek at Hwy 41	8/15/2001	Total Dissolved Solids	410	mg/L	FALSE	Ions (TDS/TSS)
San Cristobal Creek at Hwy 41	8/15/2001	Total Suspended Solids	225	mg/L	FALSE	Ions (TDS/TSS)
San Cristobal Creek at Hwy 41	8/15/2001	Ammonia	0.1	mg/l	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/15/2001	Nitrate + Nitrite (N)	0.11	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/15/2001	Phosphorus, Total	0.194	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/15/2001	Total Kjehldal Nitrogen	0.318	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/15/2001	Total Organic Carbon	6.1	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Phosphorus, Total	0.034	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Total Kjehldal Nitrogen	0.551	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Total Organic Carbon	7.96	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Phosphorus, Total	0.049	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Total Kjehldal Nitrogen	0.576	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	5/23/2001	Total Organic Carbon	8.08	mg/L	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/14/2001	Alkalinity	90.4	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Bicarbonate	94.4	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Calcium	64.5	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Carbonate	15.6	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Chloride	10	mg/L	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Hardness	190	mg/L CaCO3	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Magnesium	6.97	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Potassium	5	mg/L	TRUE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Sodium	7.03	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Sulfate	107	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Total Dissolved Solids	250	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Total Suspended Solids	2700	mg/L	FALSE	Ions (full suite)
San Cristobal Creek at Hwy 41	8/14/2001	Ammonia	0.1	mg/l	TRUE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/14/2001	Nitrate + Nitrite (N)	0.13	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/14/2001	Phosphorus, Total	1.93	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/14/2001	Total Kjehldal Nitrogen	0.664	mg/l	FALSE	Nutrients (total)
San Cristobal Creek at Hwy 41	8/14/2001	Total Organic Carbon	7.8	mg/l	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	8/15/2001	Calcium	54.3	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	8/15/2001	Hardness	202	mg/L CaCO3	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	8/15/2001	Magnesium	16.1	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	8/15/2001	Total Dissolved Solids	362	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	8/15/2001	Total Suspended Solids	6	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	8/15/2001	Ammonia	0.1	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/15/2001	Nitrate + Nitrite (N)	0.1	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/15/2001	Phosphorus, Total	0.03	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/15/2001	Total Kjehldal Nitrogen	0.1	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/15/2001	Total Organic Carbon	3	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/26/2001	Calcium	70.6	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/26/2001	Hardness	241	mg/L CaCO3	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/26/2001	Magnesium	15.8	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/26/2001	Total Dissolved Solids	424	mg/L	FALSE	Ions (TDS/TSS)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek in Galisteo	9/26/2001	Total Suspended Solids	3	mg/L	TRUE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/26/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/26/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/26/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/26/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/26/2001	Total Organic Carbon	13.5	mg/L	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	9/27/2001	Calcium	70.2	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/27/2001	Hardness	239	mg/L CaCO3	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/27/2001	Magnesium	15.6	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/27/2001	Total Dissolved Solids	412	mg/L	FALSE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/27/2001	Total Suspended Solids	3	mg/L	TRUE	Ions (TDS/TSS)
Galisteo Creek in Galisteo	9/27/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/27/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/27/2001	Phosphorus, Total	0.035	mg/L	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	9/27/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/27/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/23/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/23/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/23/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/23/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/23/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/24/2001	Ammonia	0.12	mg/L	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	5/24/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/24/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/24/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/24/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/22/2001	Alkalinity	191	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Bicarbonate	233	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Calcium	49	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Carbonate	0	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Chloride	22.8	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Fluoride	0.95	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Hardness	186	mg/L CaCO3	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Magnesium	15.4	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Potassium	5	mg/l	TRUE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Sodium	25	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Sulfate	78.6	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Total Dissolved Solids	378	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Total Suspended Solids	3	mg/l	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	5/22/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/22/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/22/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/22/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	5/22/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/25/2001	Alkalinity	200	mg/L	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Bicarbonate	244	mg/L	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Calcium	68.7	mg/L	FALSE	Ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Carbonate	0	mg/L	FALSE	Ions (full suite)

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek in Galisteo	9/25/2001	Chloride	21.4	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Hardness	238	mg/L CaCO3	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Magnesium	16.1	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Potassium	5	mg/L	TRUE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Sodium	22.4	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Sulfate	75.6	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Total Dissolved Solids	380	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Total Suspended Solids	3	mg/L	TRUE	ions (full suite)
Galisteo Creek in Galisteo	9/25/2001	Ammonia	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/25/2001	Nitrate + Nitrite (N)	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/25/2001	Phosphorus, Total	0.03	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/25/2001	Total Kjehldal Nitrogen	0.1	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	9/25/2001	Total Organic Carbon	3	mg/L	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/14/2001	Alkalinity	110	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Bicarbonate	120	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Calcium	56.9	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Carbonate	13.9	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Chloride	10.2	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Hardness	181	mg/L CaCO3	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Magnesium	9.4	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Potassium	5	mg/L	TRUE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Sodium	13.2	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Sulfate	54.3	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Total Suspended Solids	8800	mg/L	FALSE	ions (full suite)
Galisteo Creek in Galisteo	8/14/2001	Ammonia	0.1	mg/l	TRUE	Nutrients (total)
Galisteo Creek in Galisteo	8/14/2001	Nitrate + Nitrite (N)	0.24	mg/l	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	8/14/2001	Phosphorus, Total	2.84	mg/l	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	8/14/2001	Total Kjehldal Nitrogen	0.624	mg/l	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	8/14/2001	Total Organic Carbon	11.9	mg/l	FALSE	Nutrients (total)
Galisteo Creek in Galisteo	11/5/2003	Alkalinity	222	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Bicarbonate	271	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Calcium	88.4	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Carbonate	0	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Chloride	20	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Fluoride	1.01	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Hardness	293	mg/L CaCO3	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Hardness (Ca & Mg)	293	mG/L CaCO3	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Magnesium	17.5	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Potassium	5	mg/L	TRUE	ions
Galisteo Creek in Galisteo	11/5/2003	Sodium	26.7	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Sulfate	80.1	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Total Dissolved Solids	432	mg/L	FALSE	ions
Galisteo Creek in Galisteo	11/5/2003	Total Suspended Solids	10	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Alkalinity	202	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Bicarbonate	246	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Calcium	169	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Carbonate	0	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Chloride	19.6	mg/L	FALSE	ions

Station	DateTime	Analyte name	conc	Units	Less than	SampleType
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Fluoride	1.09	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Hardness	667	mg/L CaCO3	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Hardness (Ca & Mg)	667	mG/L CaCO3	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Magnesium	59.6	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Potassium	5	mg/L	TRUE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Sodium	15.2	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Sulfate	680	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Total Dissolved Solids	1260	mg/L	FALSE	ions
Galisteo Creek at Richardson property above CR 55A	11/6/2003	Total Suspended Solids	3	mg/L	TRUE	ions

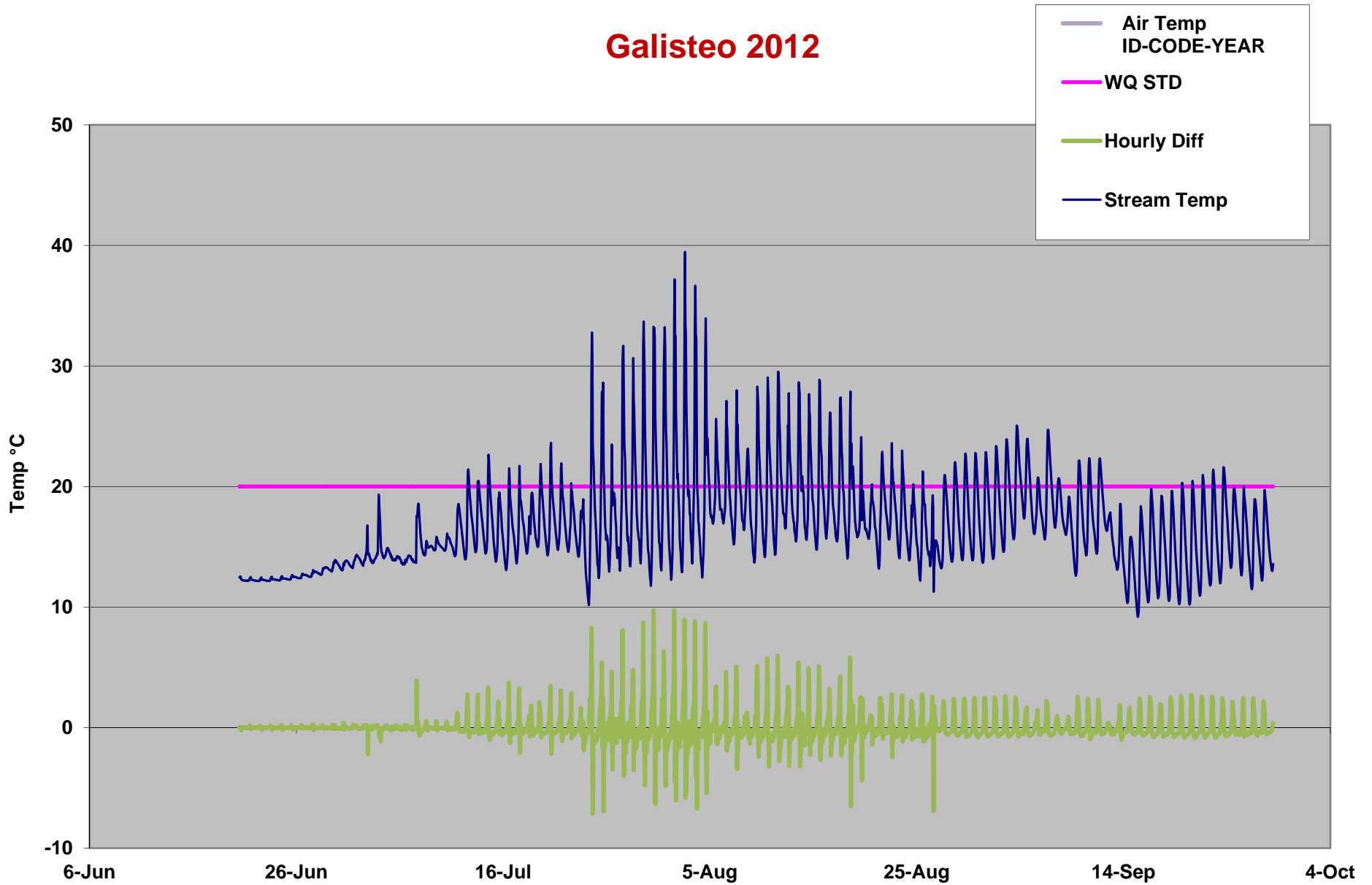
**Table C3. Fish records**

FISH RECORDS											
Common name	Native NM basins	Pollution Tolerance	Temperature preference	Location	Date	Catnum	Genus	Species	Spec	Size_From	Size_To
flathead chub	RG, P, C	T	I	Galisteo Creek at NM 14 at Cerrillos	9/7/2001	48173	Platygobio	gracilis	1	9.5	
flathead chub	RG, P, C	T	I	Galisteo Creek at CR 55A crossing	9/7/2001	48174	Platygobio	gracilis	6	23	73
flathead chub	RG, P, C	T	I	Galisteo Creek at NM 41 in Galisteo	9/7/2001	48175	Platygobio	gracilis	3	35	44

**KEY:**

Basins		Pollution tolerance		temperature preference	
C	Canadian	T	tolerant	W	Warm
P	Pecos	I	intermediate	I	Intermediate
RG	Rio Grande	S	sensitive	C	Cold

# Galisteo 2012



C1. Canoncito Thermograph



**STORET LDC - Detailed Data Report**

Organization Code:	<b>21NMEX</b>	Organization Name:	<b>N.MEXICO DEPT HLTH &amp; ENV</b>
Station ID:	<b>URG000.000505</b>	Station Alias:	<b>URG000000505</b>
Station Name:	<b>GALISTEO CREEK ABOVE RIO GRANDE WESTERN GULF UPPER RIO GRANDE ABOVE PECOS RIVER</b>		
State:	<b>New Mexico</b>	County:	<b>Sandoval</b>
Latitude:	<b>35deg. 32min. 49sec. N</b>	Longitude:	<b>106deg. 13min. 45sec. W</b>
Hydrologic Unit Code (HUC):	<b>13020201</b>		
Station Type Indicator Description:	<b>Surface Water</b>		
Legacy STORET Station Type:	<b>/TYPA/AMBNT/STREAM/BIO</b>		

Start Date:	<b>06-30-1995</b>	Start Time:	<b>1345</b>
End Date:		End Time:	<b>0</b>
Sample Depth:	<b>feet</b>	Effluent Monitoring Code:	
UMK:		Replicate Number:	
Composite Method Code:		Pipe ID:	
Composite/Grab Number:			
Primary/Secondary Activity Category:			

Parameter Code	Parameter Long Name	Result Value	Remark Code	Composite Statistic Code
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	20.00		D
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	550.00		D
00116	INTENSIVE SURVEY IDENTIFICATION NUMBER	953501.00		D
00300	OXYGEN, DISSOLVED MG/L	3.40		D
00301	OXYGEN, DISSOLVED, PERCENT OF SATURATION %	36.9583	\$	D
00400	PH (STANDARD UNITS)	8.43		D
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	151.00		D
00440	BICARBONATE ION (MG/L AS HCO3)	185.00		D
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	2528.00		D
00600	NITROGEN, TOTAL (MG/L AS N)	1.30	C	D
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	0.30	C	D
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	0.30		D
00612	AMMONIA, UNIONZED (MG/L AS N)	0.0288995	\$	D
00619	AMMONIA, UNIONIZED (CALC FR TEMP-PH-NH4) (MG/L)	0.0351387	\$	D
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	0.60		D
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	0.70		D
00640	NITROGEN, INORGANIC, TOTAL (MG/L AS N)	1.00	C	D
00665	PHOSPHORUS, TOTAL (MG/L AS P)	7.20		D

### Field Data

<b>Galisteo Ck - Hwy 14</b> <b>in Cerrillos</b>		Entered on: _____	By: _____
		Validated on: _____	By: _____
Latitude: 35.030339	Longitude: -106.09416	Elevation: _____	feet
Driving Directions: 35.433653	106.121515		meters 5676 ft.

Field Sampling Data		Temperature (°C):	19.74
Date: 4-27-10		Specific Conductance (µS/cm):	1517
Time: 11:30		Salinity (ppt):	
Staff: PS: TMS		DO (mg/L):	7.21
Sonde ID: _____		DO sat. @ local elev. (%):	103
Data logger ID: _____		pH @ 25°C:	8.24
DO Recalibrated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	_____ mm Hg	Turbidity (NTU):	34.2

Sampling Comments: _____	DO Change: _____
--------------------------	------------------

Flow Condition Rating	(complete during each sampling run)	Rating
0 - Dry Channel (no surface or shallow subsurface water apparent)	3 - Moderate Flow (obvious flow below bankfull)	
1 - No Flow (interrupted/isolated pools with no connection)	4 - High Flow (water level is at or near bankfull)	
2 - Low Flow (little surface/subsurface flow between isolated pools)	5 - Flood Flow (water level is above bankfull)	

Activity IDs / RIDs	Environmental Samples:	Duplicate Samples:	Blanks:
Ions/TSS/TDS			Do not collect "ions" blanks
Total Nutrients:			"Reagent blank" (distilled water, acidified)
Acidified ___ Pre ___ Field			
E. Coli:			
SWOB Field SWOB Lab BLD			
Total Metals (Hg, Se, Al):			Do not collect "total metals" blanks
Acidified ___ Pre ___ Field			
Dissolved Metals:			"Equipment blank" (distilled water, filtered and acidified)
Acidified ___ Pre ___ Field			
Radon:			
Acidified ___ Pre ___ Field			
Other (specify): _____			
Preserved? _____			
Other (specify): _____			
Preserved? _____			

### Field Data

<b>Gallegos CK</b> <b>CR 55A C. Richardson</b>		Entered on: _____	By: _____
		Verified on: _____	By: _____
Latitude: <b>35.636389</b>	Longitude: <b>-106.49115</b>	Elevation: _____	feet <b>5900</b>
Driving Directions: <b>35403336</b>	<b>106 0 50031</b>		meters <b>1768</b>

Field Sampling Data		Temperature (°C): <b>21.97</b>
Date: <b>4-27-10</b>	Specific Conductance (µS/cm): <b>1407</b>	
Time: <b>12:40</b>	Salinity (ppt): _____	
Staff: <b>DS, TM</b>	DO (mg/L): <b>103.3</b>	
Sonde ID: _____	DO sat. @ local elev. (%): <b>6.97</b>	
Data logger ID: _____	pH @ 25°C: <b>8.2</b>	
DO Recalibrated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Turbidity (NTU): <b>9.2</b>	
<b>595</b> mm Hg		
Sampling Comments: _____		DO Charge: <b>739</b>

Flow Condition Rating	(complete during each sampling run)	Rating
0 - Dry Channel (no surface or shallow subsurface water apparent)	3 - Moderate Flow (obvious flow, below bankfull)	
1 - No Flow (non-plasticated pools with no connection)	4 - High Flow (water level is at or near bankfull)	
2 - Low Flow (little surface/subsurface flow between isolated pools)	5 - Flood Flow (water level is above bankfull)	

Activity IDs / RIDs	Environmental Samples:	Duplicate Samples:	Blanks:
Ions/TSS/TDS			Do not collect "ions" blanks
Total Nutrients: Acidified ___ Pre ___ Field			"Reagent blank" (distilled water, acidified)
E. Coli: SWCSF #H SWCS Lab SLD			
Total Metals (Hg, Se, Al): Acidified ___ Pre ___ Field			Do not collect "total metals" blanks
Dissolved Metals: Acidified ___ Pre ___ Field			"Equipment blank" (distilled water, filtered and acidified)
Redox: Acidified ___ Pre ___ Field			
Other (specify): _____			
Preserved? _____			
Other (specify): _____			
Preserved? _____			

### Field Data

<b>Calistoga Sta in Calistoga</b>		Entered on:	By:
		Verified on:	By:
		1	feet 6037
Latitude: <b>35.838333</b>	Longitude: <b>120.89445</b>	Elevation:	meters 1840
Driving Directions: <b>35.395335</b>	<b>105.943422</b>		

Field Sampling Data		Temperature (°C):	
Date:	<b>21-27-10</b>	Specific Conductance (µS/cm):	<b>727</b>
Time:	<b>2:00</b>	Salinity (ppt):	
Staff:	<b>DS, TM</b>	DO (mg/L):	<b>6.78</b>
Sonde ID:		DO sat. @ local elev. (%):	<b>102.6</b>
Data logger ID:		pH @ 25°C:	<b>8.21</b>
DO Recalibrated?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Turbidity (NTU):	<b>9.1</b>
	_____ mm Hg		

Sampling Comments:	DO Charge: <b>33.9</b>
--------------------	------------------------

Flow Condition Rating	(complete during each sampling run)	Rating:
0 - Dry Channel (no surface or shallow subsurface water apparent)	3 - Moderate Flow (obvious flow, below bankfull)	
1 - No Flow (interrupted/isolated pools with no connection)	4 - High Flow (water level in or near bankfull)	
2 - Low Flow (little surface/surface flow between isolated pools)	5 - Flood Flow (water level is above bankfull)	

Activity IDs / RIDs	Environmental Samples:	Duplicate Samples:	Blanks:
Ions/TSS/TDS			Do not collect "ions" blanks
Total Nutrients:			"Reagent blank" (distilled water, acidified)
Acidified _____ Pre _____ Field _____			
E. Coli:			
RWDR-FRM _____ SWDR-FRM _____			
Total Metals (Hg, Se, Al):			Do not collect "total metals" blanks
Acidified _____ Pre _____ Field _____			
Dissolved Metals:			"Equipment blank" (distilled water, filtered and acidified)
Acidified _____ Pre _____ Field _____			
Rade:			
Acidified _____ Pre _____ Field _____			
Other (specify): _____			
Preserved? _____			
Other (specify): _____			
Preserved? _____			

**Thermograph Deployment/Download/Retrieval Field Sheet**

(Last Revision 29 Jan 2010)

Thermograph #: 1305270

Station name/ID: Galisteo Cr in Galisteo / 30 Galisteo 56.4

Staff at deployment: Schiffmiller, Domingo

Assessment unit: Galisteo Cr (perennial reaches abv Santo Domingo)

Water Quality Standards segment: 20.6.4.121

ALU / Criterion: USCWAAL120

Location description:

Go downstream from bridge to 50 meters. Thermo is attached to a T-post next to a dead section of river in the channel. Blue top of T-post is visible. At Ft. RD

Lat/Long: 35.39505 105.94428

GPS: YIN

Date/time deployed: 8 Jul 2010 1000

(actual deployment Lat/Long's are preferable to generic station Lat/Long's)

Medium: Water / Air

Estimate % daytime shade on thermograph: \_\_\_\_\_

Download record:	Date	Time removed	Time replaced	Staff	Sensor Status
Download 1					<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Download 2					<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Download 3					<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Download 4					<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Retrieval					<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried

File name: \_\_\_\_\_

Additional comments:

Cross section sketch:

Plan view sketch:



Write good directions, draw a good site map, and note triangulation distances.  
Take photos from 2 angles (have someone point to or stand next to the thermograph):

PHOTO 1 Description \_\_\_\_\_

PHOTO 2 Description \_\_\_\_\_

**Stream Field Data Form**

Galisteo @ Canoncito  
 T. Sigate's property  
 Entered on: \_\_\_\_\_ By: \_\_\_\_\_  
 Verified on: \_\_\_\_\_ By: \_\_\_\_\_  
 Latitude: 38.57688045 Longitude: 105.8486328 Elevation: 6700 feet  
meters  
 Driving Directions: Lower Canoncito to CR 51, Rt Spirit Valley # 82

**Field Sampling Data**

Date: 3-28-12 Temperature (°C): 17.3  
 Time: 15:50 Specific Conductance (µS/cm): 706  
 Staff: DS, NW Salinity (ppt): 0.38  
 Sonde ID: 000#11 DO (mg/L): 8.5  
 Data logger ID: \_\_\_\_\_ DO sat. @ local elev. (%): 112  
 DO Recalibrated?  Yes  No pH @ 25°C: NA probe not functional  
 \_\_\_\_\_ mm Hg Turbidity (NTU): -2.6

Sampling Comments: \_\_\_\_\_ DO Charge: \_\_\_\_\_

**Flow Condition Rating** (complete during each sampling run)

0 - Dry Channel (no surface or subsurface water apparent)	3 - Moderate Flow (obvious flow, below bankfull)	Rating:  <b>3</b>
1 - No Flow (interrupted/isolated pools with no connection)	4 - High Flow (water level is in or near bankfull)	
2 - Low Flow (little surface/subsurface flow between isolated pools)	5 - Flood Flow (water level is above bankfull)	

Activity IDs / RIDs	Environmental Samples:	Duplicate Samples:	Blanks:
ions/TSS/TDS			Do not collect "lens" blanks
Total Nutrients: Acidified ___ Pre ___ Field			"Field blank" (distilled water, acidified - prepared in the field)
E. Coli: ___ SWQB-Field ___ SWQB-Lab ___ SLD			"Field blank" (distilled water - prepared in the field)
Total Metals (Hg, Pb, Al): Acidified ___ Pre ___ Field			Do not collect "total metals" blanks
Dissolved Metals: Acidified ___ Pre ___ Field			"Equipment blank" (distilled water, filtered and acidified in the field)
Rads: Acidified ___ Pre ___ Field			
Other (specify): _____ Preserved? _____			
Other (specify): _____ Preserved? _____			

Field Sheet - rev. 28Apr 2011

**Thermograph Deployment/Upload/Retrieval Field Sheet**

(Last Revision 22MAR 2011)

Thermograph #: 1305269

Station name/ID: Galister Cr @ Sigsbedt

Staff at deployment: Sarabia Cudia

Assessment unit: Galister Cr (perennial/roches)

Water Quality Standards segment: 20.6.a.21 ALU Criterion: HACW

Location description: Rd fork to stream, go left up stream 20 m. Tgraphs in pool by boulders under willows

Lat/Long: 35.51927 / 105.84684 GPS:  Y  N

Date/time deployed: 6-20-12 10:10 (actual deployment Lat/Long's are preferable to generic station Lat/Long's)

Medium:  Water  Air

Upload record:	<u>2012</u> Date/Time	Staff	Comments	Sensor Status
Upload 1	<u>7/24</u>	<u>DS, CC</u>		<input checked="" type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Upload 2	<u>9/28 11:48</u>	<u>DS, TM</u>		<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input checked="" type="checkbox"/> buried
Upload 3				<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Upload 4				<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried
Retrieval				<input type="checkbox"/> submerged <input type="checkbox"/> exposed <input type="checkbox"/> buried

File name:

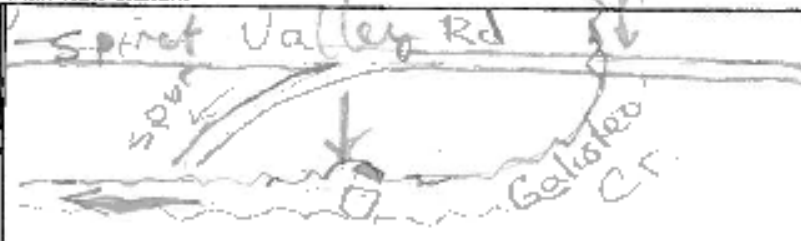
**Additional comments:**

Other Sigsbedt 466-4403, 660-5835. I 25 N to Apache Cny, left, left, left on CR 51. Pass Cougar Cny + tracks. Rt on Spirit Valley, cross Galister Cr, RR bridge. Left turn to creek, out mi from CR 51.

**Cross section sketch:**



**Plan view sketch:**



Write good directions, draw a good site map, and note triangulation distances.

Take photos from 2 angles (have someone point to or stand next to the thermograph):

PHOTO 1 Description

PHOTO 2 Description

### Field Data

<b>Galveston Cr. @ Lanon-Cito JC. Residence</b>		Entered on: _____	By: _____
		Verified on: _____	By: _____
Latitude: <del>26.630393</del>	Longitude: <del>-106.09446</del>	Elevation: _____	feet <b>6818</b>
Driving Directions: <b>35.529167</b>	<b>105.845833</b>		meters <b>2078</b>

Field Sampling Data		Temperature (°C):	
Date: <b>4-27-10</b>		Specific Conductance (µS/cm): <b>319</b>	<b>19.7</b>
Time: <b>3:30</b>		Salinity (ppt): _____	
Staff: <b>DS, TM</b>		DO (mg/L): <b>7.35</b>	
Sonde ID: _____		DO sat. @ local elev. (%): <b>104.6</b>	
Data logger ID: _____		pH @ 25°C: <b>8.43</b>	
DO Recalibrated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ mm Hg	Turbidity (NTU): <b>16.4</b>	

Sampling Comments: _____	DO Charge: _____
--------------------------	------------------

Flow Condition Rating	(complete during each sampling run)	Rating
0 - Dry Channel (no surface or shallow subsurface water apparent)	3 - Moderate Flow (obvious flow, below bankfull)	
1 - No Flow (interrupted/isolated pools with no connection)	4 - High Flow (water level is at or near bankfull)	
2 - Low Flow (little surface/subsurface flow between isolated pools)	5 - Flood Flow (water level is above bankfull)	

Activity IDs / RIDs	Environmental Samples:	Duplicate Samples:	Blanks:
ions/TSS/TDS			Do not collect "ions" blanks
Total Nutrients: Acidified ___ Pre ___ Field ___			"Reagent blank" (distilled water, acidified)
E. Coli: SWQB-Tier ___ SWQB-Lab ___ SLD ___			
Total Metals (Hg, Se, Al): Acidified ___ Pre ___ Field ___			Do not collect "total metals" blanks
Dissolved Metals: Acidified ___ Pre ___ Field ___			"Equipment blank" (distilled water, filtered and acidified)
Rads: Acidified ___ Pre ___ Field ___			
Other (specify): _____			
Preserved? _____			
Other (specify): _____			
Preserved? _____			



### Stream Field Data Form

**Apache Canyon at Canada de los Alamos**

Entered on: \_\_\_\_\_

By: \_\_\_\_\_

Verified on: \_\_\_\_\_

By: \_\_\_\_\_

*N 35.62164*

feet

Latitude: \_\_\_\_\_

Longitude: *W 105.83900* Elevation: *2379* feet

Driving \_\_\_\_\_

Directions: \_\_\_\_\_

#### Field Sampling Data

Date: *7-22-2011*  
 Time: *12:00:00*  
 Staff: *DSTMA DG*  
 Sonde ID: *1*  
 Data logger ID: \_\_\_\_\_  
 DO Recalibrated?  Yes  No  
 \_\_\_\_\_ mm Hg

Temperature (°C): *14.8*  
 Specific Conductance (µS/cm): *173*  
 Salinity (ppt): *0.08*  
 DO (mg/L): *7.4*  
 DO sat. @ local elev. (%): *96*  
 pH @ 25°C: *8.2*  
 Turbidity (NTU): *2.5*

Sampling Comments: *clear water pool*

DO Charge: *64*

#### Flow Condition Rating

*(complete during each sampling run)*

Rating

- |  |  |
|--|--|
| 0 - Dry Channel (no surface or shallow subsurface water present)     | 3 - Moderate Flow (obvious flow, below bankfull)   |
| 1 - No Flow (intermittent wetted pools with no connection)           | 4 - High Flow (water level is at or near bankfull) |
| 2 - Low Flow (little surface or surface flow between isolated pools) | 5 - Flood Flow (water level is above bankfull)     |

#### Activity IDs / RIDs

Environmental Samples:

Duplicate Samples:

Blanks:

Ions/TSS/TDS  Total Nutrients: Acidified ___ Pre ___ Field  E. Coli: ___ SWQB-Field ___ SWQB-Lab ___ SLD  Total Metals (Hg, Se, Alk): Acidified ___ Pre ___ Field  Dissolved Metals: Acidified ___ Pre ___ Field  Rads: Acidified ___ Pre ___ Field  Other (specify): _____ Preserved? _____  Other (specify): _____ Preserved? _____			Do not collect "true" blanks  "Field blank" (distilled water, acidified - prepared in the field)  "Field blank" (distilled water - prepared in the field)  Do not collect "total metals" blanks  "Equipment blank" (distilled water, filtered and acidified in the field)
--	--	--	---

Field Spec - rev. 28Apr 2011

**Thermograph Deployment/Download/Retrieval Field Sheet**

(Last Revision 01/03/2007)

Thermograph #: 2386596 **(HOBO)** StowAway

Staff at deployment: DG TM DS

Assessment unit: Apache Crk

Water Quality Standards segment: 20.8.4. 38

Station name/STORET ID:

Location description: Trail is right of creek. Straight section above sharp r bend. Therm in pool w/in straight section below log jam next to small birch tree.

Lat/Long: N35.62164

GPS: WIN 963100

Date/time deployed: 09/22/2011

W 105.89300

Medium: Water/Air 1215

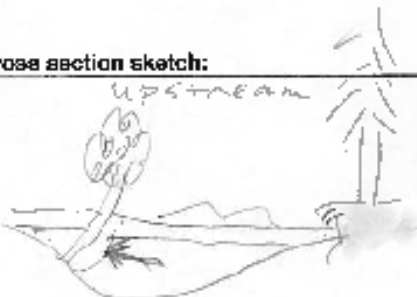
23.79 m

Estimate % shade on thermograph: 80%

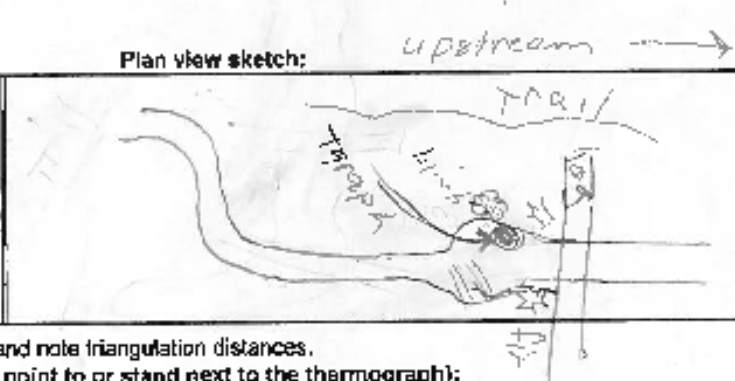
Download record:	Date	Time removed	Time replaced	Staff	Comments
Download 1	<u>Sep 6</u>	<u>12:32</u>		<u>DSG</u>	<u>Simmsged</u>
Download 2					
Download 3					
Download 4					
Retrieval:	<u>Sep 6</u>	<u>12:32</u>		<u>DSG</u>	
File name:					

Additional comments:

Cross section sketch:



Plan view sketch:



Write good directions, draw a good site map, and note triangulation distances.  
Take photos from 2 angles (have someone point to or stand next to the thermograph):

PHOTO 1 Description: ✓ Tin pointing to thermo

PHOTO 2 Description: ✓ view from upstream

*Scanned 7-27-11*

**APPENDIX D  
HYDROLOGY PROTOCOL RESULTS**

As part of this UAA, NMED applied the recently developed hydrology protocol (NMED/SWQB 2011) at five locations throughout the watershed. These locations are mapped in **Figure B1**.

**Perennial site at Waldo. Oct 2010. *Not pictured.***



**D1. Perennial site approx 0.25 mile below San Marcos Arroyo. Oct 2010.**



**D2. Intermittent site approx 1.5 mi from CR 55A crossing. Oct 2010.**



**D3. Ephemeral site in Lamy. Oct 2010.**



**Figure D4. Perennial site in Cañoncito. March 2012.**

# Hydrology Protocol field sheets

## NMED Surface Water Quality Bureau - LEVEL 1 Stream Determination Field Sheet

collected from map

Date: <u>12-2-10</u>	Stream Name: <u>Galistero</u>	Latitude: <u>35.44733718</u>	
Evaluator(s): <u>DS, TM</u>	Site ID: <u>Waldo</u>	Longitude: <u>106.14849596</u>	
<b>TOTAL POINTS:</b> Stream & of 1961 alternative of 2 12 <u>18</u>	Assessment Unit: <u>Galistero Cr</u>	Drought Index (12-mo. SPI Value):	
<b>WEATHER CONDITIONS</b>	<b>NOW:</b> <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	<b>PAST 48 HOURS:</b> <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	Has there been a heavy rain in the last 48 hours? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	<b>OTHER:</b> <u>R.R. bridge</u> Stream Modifications <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Diversions <input type="checkbox"/> YES <input type="checkbox"/> NO Discharges <input type="checkbox"/> YES <input type="checkbox"/> NO		

INDICATOR	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
<b>1.1. Water in Channel</b>	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the reach. <u>6</u>	Water is present in the channel but flows briefly due to a change in gradient or a lack of gradient or a lack of flow is necessary to observe flow. <u>4</u>	Dry channel with standing pools. There is some evidence of base flows (e.g. riparian vegetation growing along channel, saturated or moist sediments, under rocks, etc.) <u>2</u>	Dry channel. No evidence of base flows was found. <u>0</u>
<b>1.2. Fish</b>	Found easily and consistently throughout the reach. <u>3</u>	Found with little difficulty but not consistently throughout the reach. <u>2</u>	Takes 10 or more minutes of extensive searching to find. <u>1</u>	Fish are not present. <u>0</u>
<b>1.3. Benthic Macroinvertebrates</b>	Found easily and consistently throughout the reach. <u>3</u>	Found with little difficulty but not consistently throughout the reach. <u>2</u>	Takes 10 or more minutes of extensive searching to find. <u>1</u>	Macroinvertebrates are not present. <u>0</u>
<b>1.4. Filamentous Algae/Periphyton</b>	Found easily and consistently throughout the reach. <u>3</u>	Found with little difficulty but not consistently throughout the reach. <u>2</u>	Takes 10 or more minutes of extensive searching to find. <u>1</u>	Filamentous algae and/or periphyton are not present. <u>0</u>
<b>1.5. Differences in Vegetation</b>	Drum-like compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation community exists along the stream reach. Terrestrial, aquatic, or wetland species dominate the length of the reach. <u>3</u>	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. <u>2</u>	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. <u>1</u>	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands. <u>0</u>
<b>1.6. Absence of Rooted Upland Plants in Streambed</b>	Rooted upland plants are absent within the streambed/riparian zone. <u>3</u>	There are a few rooted upland plants present within the streambed/riparian zone. <u>2</u>	Rooted upland plants are consistently dispersed throughout the streambed/riparian zone. <u>1</u>	Rooted upland plants are prevalent within the streambed/riparian zone. <u>0</u>
<b>SUBTOTAL (#1.1 - #1.6)</b>				<u>18</u>
If the stream being evaluated has a subtotal < 2 at this juncture, attainment of Clean Water Act Section 101(a)(2) use is not feasible. The stream is determined to be ephemeral. If the stream being evaluated has a subtotal > 8 at this point, the stream is determined to be perennial. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.				

NMED Surface Water Quality Bureau - LEVEL 1 Stream Determination Field Sheet

Date: 10-1-10	Stream Name: Gallegos	Latitude: 35.44850
Evaluator(s): JS TM	Site ID: New Sun Acres	Longitude: 106.18434
<b>TOTAL POINTS:</b> Clean Water Act Section 101(a)(2)	Assessment Unit: Gallegos Cr.	Drought Index (12-mo. SPI Value):
<b>WEATHER CONDITIONS</b>	<b>NOW:</b> ___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ cloud cover <input checked="" type="checkbox"/> clear/sunny	<b>PAST 48 HOURS:</b> ___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ cloud cover <input checked="" type="checkbox"/> clear/sunny
	Has there been a heavy rain in the last 48 hours? ___ YES <input checked="" type="checkbox"/> NO (Heavy rain is defined as 1/4" or more of rain in a 24-hour period.) <b>OTHER:</b> Stream Modifications ___ YES <input checked="" type="checkbox"/> NO Diversions ___ YES <input checked="" type="checkbox"/> NO Discharges ___ YES <input checked="" type="checkbox"/> NO	

INDICATOR	STREAM CONDITION			
	3	2	1	0
1.1. Water in Channel	Flow is evident, if rough, the water striking rocks is seen in rip areas but may not be as evident throughout the reach.	Water is present in the channel but flow is barely discernible in areas of greater gradient change (i.e., riffles) or flowing up to a necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e., riparian vegetation growing along channel, saturated or moist sediment under rocks, etc.)	Dry channel. No evidence of base flows was found.
	6	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Found 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	0
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Found 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Found 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	0
1.5. Differences in Vegetation	Dramatic differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach. Upland, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more upland-like than vegetation in the adjacent uplands. Upland species are present between the streambanks.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent or in the streambed margin.	There are a few rooted upland plants present in the streambed margin.	Rooted upland plants are occasionally present throughout the streambed margin.	Rooted upland plants are present within the streambed margin.
	3	2	1	0
<b>SUBTOTAL (#1.1 - #1.6)</b>				16
If the stream being evaluated has a subtotal ≤ 2 at this juncture, attainment of Clean Water Act Section 101(a)(2) does not have to be determined. If the stream being evaluated has a subtotal > 2 at this point, the stream is determined to be perennial. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.				

10/1/10  
JS  
TM

NMED Surface Water Quality Bureau - LEVEL 1 Stream Determination Field Sheet

Date: 10-1-10	Stream Name: Galisteo	Latitude: 35.40008
Evaluator(s): DS TM	Site ID: abv Cathy Richt	Longitude: 106.04030
TOTAL POINTS: 14.5	Assessment Unit: Property	Drought Index (12-mo. SPI Value):
Stream is at least intermittent if $\geq 12$		
WEATHER CONDITIONS	NOW:	PAST 48 HOURS:
	<input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny
		Has there been a heavy rain in the last 48 hours? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
		OTHER: Stream Modifications <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Diversions <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Discharges <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

INDICATOR	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the reach.	Water is present in the channel but flow is barely discernible in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc.	Dry channel. No evidence of base flows was found.
	6	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	0
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach - riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/riparian way.	There are a few rooted upland plants present within the streambed/riparian way.	Rooted upland plants are consistently dispersed throughout the streambed/riparian way.	Rooted upland plants are prevalent within the streambed/riparian way.
	3	2	1	0
<b>SUBTOTAL (#1.1 - #1.6)</b>				<b>5</b>
If the stream being evaluated has a subtotal $\leq 2$ at this juncture, attainment of Clean Water Act Section 101(a)(2) uses is not feasible. The stream is determined to be ephemeral. If the stream being evaluated has a subtotal $\geq 18$ at this point, the stream is determined to be perennial. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.				



NMED Surface Water Quality Bureau - LEVEL 1 Stream Determination Field Sheet

Date: 10-1-10	Stream Name: Galisteo	Latitude: 35.47790
Evaluator(s): OS, JM	Site ID: Lamy RR	Longitude: 105.878607
<b>TOTAL POINTS:</b> 18	Assessment Unit: Galisteo C.R.	Drought Index (12-mo. SPI Value):
<b>WEATHER CONDITIONS</b>	<b>PAST 48 HOURS:</b>	Has there been a heavy rain in the last 48 hours? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
NOW: <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> reduced cover <input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> reduced cover <input checked="" type="checkbox"/> clear/sunny	OTHER: Stream Modifications <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Diversions <input type="checkbox"/> YES <input type="checkbox"/> NO Discharges <input type="checkbox"/> YES <input type="checkbox"/> NO

INDICATOR	STREAM CONDITION			
	6	4	2	0
1.1. Water in Channel	Flow is present throughout the reach. Moving water is seen in all the areas but may not be as evident throughout the reach.	Flow is present in the channel but flow is barely discernable in areas of greatest channel change. No artificial or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (un-riparian vegetation growing along channel, saturated or moist sediment under rocks, etc).	Dry channel. No evidence of base flows was found.
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
1.5. Differences in Vegetation	Drumming or pronounced differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach - riparian, aquatic, or wetland species dominate the reach of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no pronounced or consistent differences between the two.	No consistent or clearly discernable vegetation differences between the streambanks and the adjacent uplands.
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed along.	There are a few rooted upland plants present within the streambed along.	Rooted upland plants are consistently dispersed throughout the streambed along.	Rooted upland plants are present throughout the streambed along.
<b>SUBTOTAL (#1.1 - #1.6)</b>				<b>2</b>

If the stream being evaluated has a subtotal ≤ 2 at this juncture, attainment of Clean Water Act Section 101(a)(2) uses is not feasible. The stream is determined to be ephemeral. If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be perennial. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

NWED Surface Water Quality Bureau - LEVEL 1 Hydrology Determination Field Sheet

*Galisteo Stream Group*

Date: 3-28-12	Stream Name: Galisteo	Latitude: 35.51698045
Evaluator(s): DS, NW	Site ID: unofficial site	Longitude: -105.8486325
<b>TOTAL POINTS:</b> Sum of best indicator of 2-12	Assessment Unit: Galisteo @ Sigstedt	Drought Index (12-mo. SPI Value):
<b>WEATHER CONDITIONS</b>	<b>NOW:</b>	<b>PAST 48 HOURS:</b>
	<input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Modarate	Weak	Poor
<b>1.1. Water in Channel</b>	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs. <b>6</b>	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow. <b>4</b>	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc) <b>2</b>	Dry channel. No evidence of base flows was found. <b>0</b>
<b>1.2. Fish</b>	Found easily and consistently throughout the reach. <b>3</b>	Found with little difficulty but not consistently throughout the reach. <b>2</b>	Takes 10 or more minutes of extensive searching to find. <b>1</b>	Fish are not present. <b>0</b>
<b>1.3. Benthic Macroinvertebrates</b>	Found easily and consistently throughout the reach. <b>3</b>	Found with little difficulty but not consistently throughout the reach. <b>2</b>	Takes 10 or more minutes of extensive searching to find. <b>1</b>	Macroinvertebrates are not present. <b>0</b>
<b>1.4. Filamentous Algae/Periphyton</b>	Found easily and consistently throughout the reach. <b>3</b>	Found with little difficulty but not consistently throughout the reach. <b>2</b>	Takes 10 or more minutes of extensive searching to find. <b>1</b>	Filamentous algae and/or periphyton are not present. <b>0</b>
<b>1.5. Differences in Vegetation</b>	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach - riparian, aquatic, or wetland species dominate the length of the reach. <b>3</b>	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. <b>2</b>	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. <b>1</b>	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands. <b>0</b>
<b>1.6. Absence of Rooted Upland Plants in Streambed</b>	Rooted upland plants are absent within the streambed/trailveg. <b>3</b>	There are a few rooted upland plants present within the streambed/trailveg. <b>2</b>	Rooted upland plants are consistently dispersed throughout the streambed/trailveg. <b>1</b>	Rooted upland plants are prevalent within the streambed/trailveg. <b>0</b>
<b>SUBTOTAL (#1.1 - #1.6)</b>				<b>15</b>
If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL. If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.				

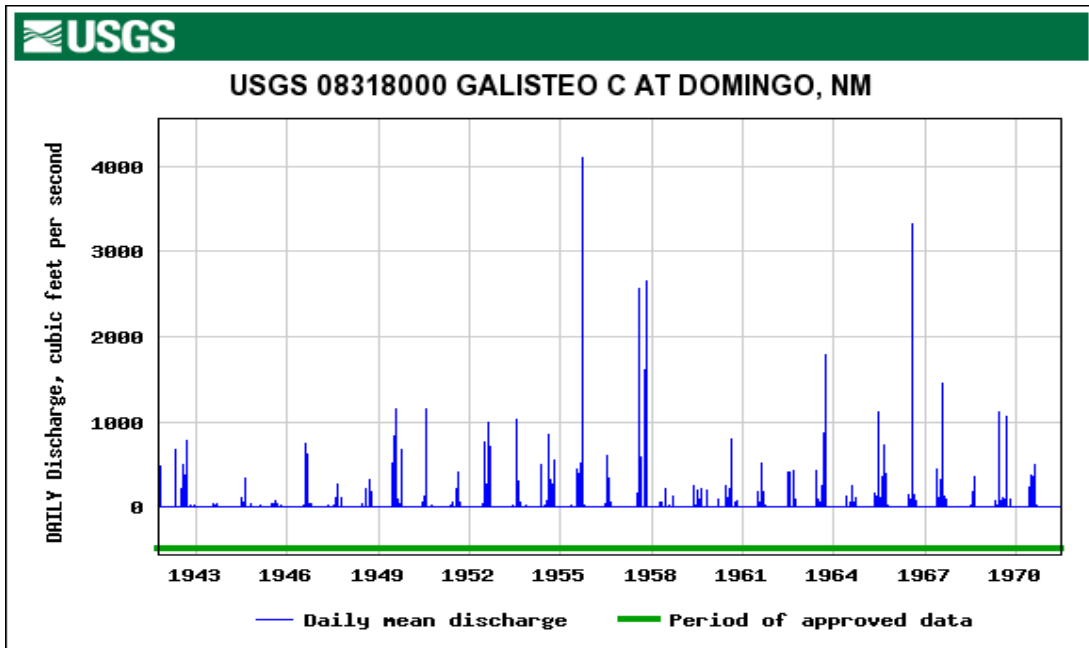
other: RR confined + moved channel + floodplain

**APPENDIX E  
USGS GAUGE DATA**

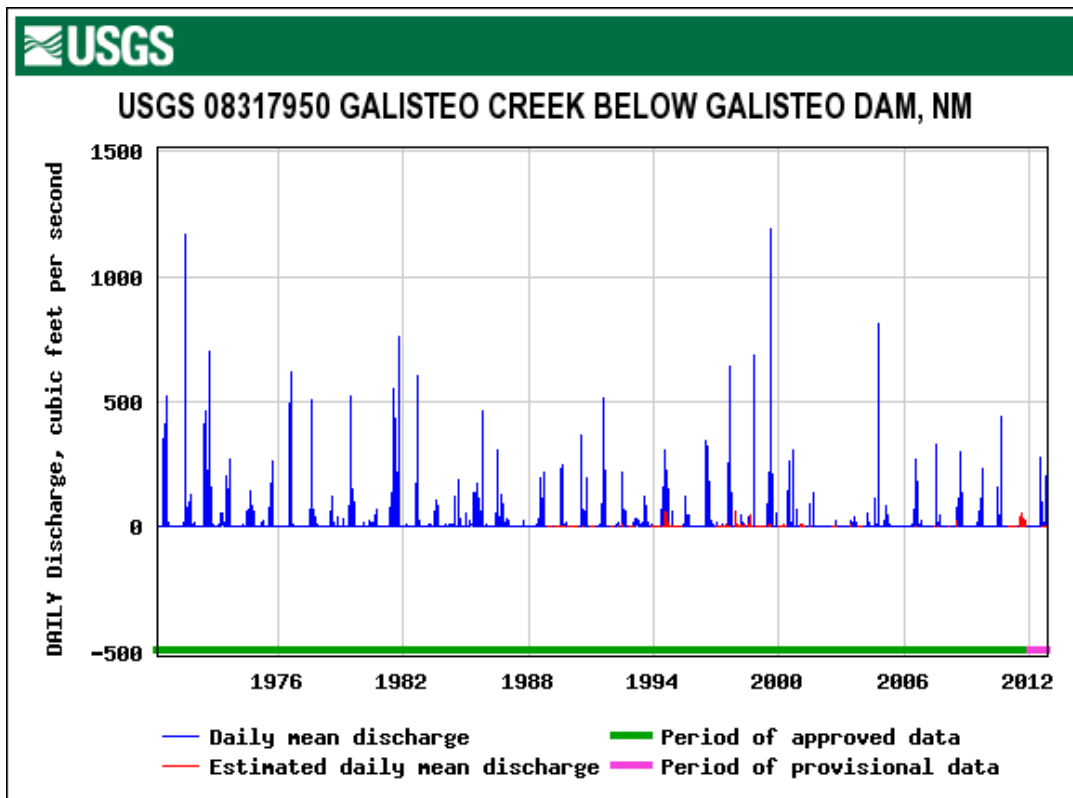
SITE NO	SITE NAME	Begin Date	End Date	Count
<a href="#">08318000</a>	GALISTEO C AT DOMINGO, NM			
	<a href="#">Daily Data</a>	-	-	-
	Discharge, cubic feet per second	1941-10-01	1971-06-30	10865
	<a href="#">Daily Statistics</a>	-	-	-
	Discharge, cubic feet per second	1941-10-01	1971-06-30	10865
	<a href="#">Monthly Statistics</a>	-	-	-
	Discharge, cubic feet per second	1941-10	1971-06	
	<a href="#">Annual Statistics</a>	-	-	-
	Discharge, cubic feet per second	1942	1971	
	<a href="#">Peak streamflow</a>	1942-07-27	1970-08-03	29
	<a href="#">Field measurements</a>	1960-10-03	1965-09-15	72
	<a href="#">Field/Lab water-quality samples</a>	1960-10-15	1970-08-03	67
<a href="#">08317950</a>	GALISTEO CREEK BELOW GALISTEO DAM, NM			
	Current /Historical Observations (availability statement)	2007-10-01	current	
	<a href="#">Daily Data</a>	-	-	-
	Discharge, cubic feet per second	1970-03-20	current	15557
	<a href="#">Daily Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970-03-20	2012-01-23	15285
	<a href="#">Monthly Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970-03	2012-01	
	<a href="#">Annual Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970	2012	
	<a href="#">Peak streamflow</a>	1971-07-27	2011-08-21	41
	<a href="#">Field measurements</a>	1970-03-20	2012-02-10	429
	<a href="#">Field/Lab water-quality samples</a>	1971-07-01	2010-08-16	77
	<a href="#">Instantaneous-Data Archive **offsite** (discharge)</a>	1991-04-01	2007-09-30	370937
	<a href="#">Annual Water-Data Report (pdf) **offsite**</a>	2006	2011	6
<a href="#">08317850</a>	GALISTEO CREEK ABOVE GALISTEO RESERVOIR, NM			
	<a href="#">Daily Data</a>	-	-	-
	Discharge, cubic feet per second	1970-05-01	1976-09-30	2345
	<a href="#">Daily Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970-05-01	1976-09-30	2345
	<a href="#">Monthly Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970-05	1976-09	
	<a href="#">Annual Statistics</a>	-	-	-
	Discharge, cubic feet per second	1970	1976	
	<a href="#">Peak streamflow</a>	1970-08-21	1976-08-23	4
	<a href="#">Field/Lab water-quality samples</a>	1974-06-28	1975-02-04	2
08317500	GALISTEO CREEK AT CANONCITO, NM			
	<a href="#">Peak streamflow</a>	1955	2011-07-24	49
	<a href="#">Field measurements</a>	1961-08-22	2010-03-25	7
	<a href="#">Annual Water-Data Report (pdf) **offsite**</a>	1955	2009	
08317600	SAN CRISTOBAL ARROYO NR GALISTEO, NM			
	<a href="#">Peak streamflow</a>	1955	2011-08-02	50
	<a href="#">Field measurements</a>	1956-06-27	9/16/2009	9
	<a href="#">Annual Water-Data Report (pdf) **offsite**</a>	1955	2009	
08317700	TARHOLE CANYON NEAR GALISTEO, NM			
	<a href="#">Peak streamflow</a>	1952-08-12	1986-06-26	34
08317720	CANADA DE LA CUEVA NR GALISTO, NM			
	Peak streamflow	1970-08-09	1995-05-29	25

SITE NO	SITE NAME	Begin Date	End Date	Count
08317800	CANADA DE LAS MINAS TRIB NR SANTA FE, NM			
	Peak streamflow	1952-08-12	1982-09-17	29

Source: <http://nwis.waterdata.usgs.gov/>

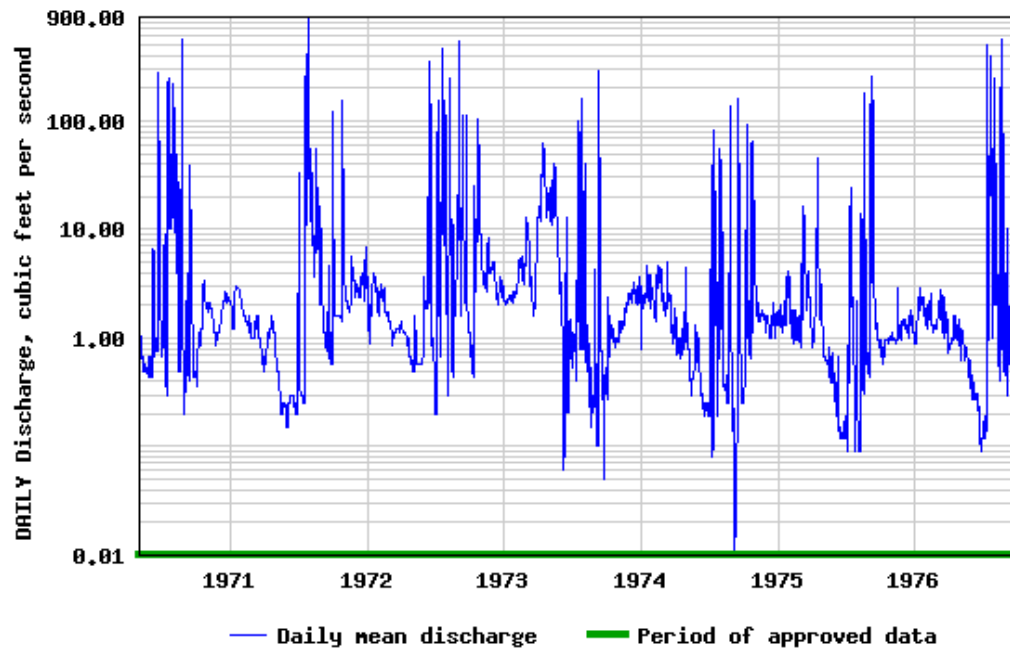


E1. Ephemeral reach



E2. Ephemeral reach

### USGS 08317850 GALISTEO CREEK ABOVE GALISTEO RESERVOIR, NM



### E3. Perennial reach near Waldo

Summary Table: Characteristics of the Ecoregions of New Mexico

Table 20: COLORADO PLATEAUS. Level IV Ecoregions: 20b. Shale Deserts and Sedimentary Basins; 20c. Semiarid Benchlands and Canyonlands; 20d. Arid Canyonlands. Columns include Physiography, Geology, Soils, Climate, Natural Vegetation, and Land Cover and Land Use.

Table 21: SOUTHERN ROCKIES. Level IV Ecoregions: 21a. Alpine Zone; 21b. Crystalline Subalpine Forests; 21c. Crystalline Mid-Elevation Forests; 21d. Foothill Woodlands and Shrublands; 21e. Sedimentary Subalpine Forests; 21f. Sedimentary Mid-Elevation Forests; 21g. Volcanic Subalpine Forests; 21h. Volcanic Mid-Elevation Forests; 21j. Grassland Parks.

Table 22: ARIZONA/NEW MEXICO PLATEAU. Level IV Ecoregions: 22a. San Luis Shrublands and Hills; 22b. San Luis Alluvial Flats and Wetlands; 22c. Taos Plateau; 22d. Rio Grande Floodplain; 22e. North Central New Mexico Valleys and Mesas; 22f. San Juan Chaco Tablelands and Mesas; 22g. Semiarid Tablelands; 22h. Lava Malpais; 22i. Plains of San Agustin; 22j. Albuquerque Basin.

Table 23: ARIZONA/NEW MEXICO MOUNTAINS. Level IV Ecoregions: 23a. Chihuahuan Desert Slopes; 23b. Madrean Lower Montane Woodlands; 23c. Conifer Woodlands and Savannas; 23d. Arizona/New Mexico Subalpine Forests; 23e. Conifer Woodlands and Savannas; 23f. Rocky Mountain Conifer Forests; 23g. Rocky Mountain Subalpine Forests.

Table 24: CHIHUAHUA DESERTS. Level IV Ecoregions: 24a. Chihuahuan Basin and Flats; 24b. Chihuahuan Desert Grasslands; 24c. Low Mountain and Bajadas; 24d. Chihuahuan Montane Woodlands; 24e. Rio Grande Floodplain; 24f. Dunes; 24g. Cynipifrons Dunes; 24h. Lava Malpais.

Table 25: HIGH PLAINS. Level IV Ecoregions: 25b. Rolling Sand Plains; 25c. Moderate Relief Plains; 25d. Canadian/Cimarron High Plains; 25e. Llano Estacado; 25f. Shiny Sands; 25g. Arid Llano Estacado.

Table 26: SOUTHWESTERN TABLELANDS. Level IV Ecoregions: 26a. Semiarid Canadian Breaks; 26b. Mesa de Maya/Black Mesa; 26c. Piñon-Juniper Woodlands and Savannas; 26d. Upper Canadian Flats; 26e. Canadian Canyon; 26f. Conchas/Peños Pintas; 26g. Central New Mexico Plains; 26h. Phreat Lake Basins; 26i. Southern New Mexico Plains.

Table 27: MADREAN ARCHIPELAGO. Level IV Ecoregions: 79a. Apachian Valleys and Low Hills; 79b. Lower Madrean Woodlands; 79c. Madrean Pine-Oak and Mixed-Conifer Forests.

SOURCES: D.M. and J.M. 1991. Study of the Madrean Archipelago... M.C. 1991. The Madrean Archipelago... M.C. 1991. The Madrean Archipelago... M.C. 1991. The Madrean Archipelago... M.C. 1991. The Madrean Archipelago...

