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## EXECUTIVE SUMMARY

Section 303(d) of the Federal Clean Water Act requires states to develop Total Maximum Daily Load (TMDL) management plans for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a water body can assimilate without violating a state's water quality standards. It also allocates that load capacity to known point sources and nonpoint sources (NPS) at a given flow. Total maximum daily loads are defined in 40 Code of Federal Regulations Part 130 as the sum of the individual Waste Load Allocations (WLAs) for point sources and Load Allocations (LAs) for NPS and background conditions, and includes a Margin of Safety (MOS).

The San Juan River watershed is located in northwestern New Mexico. The Surface Water Quality Bureau (SWQB) conducted an intensive surface water quality survey of the San Juan River basin in 2002. Stations were located throughout the San Juan River basin during an intensive watershed survey to evaluate the impact of tributary streams. As a result of assessing data generated during this monitoring effort, combined with data from outside sources that met SWQB quality assurance requirements, impairment determinations of New Mexico water quality standards for fecal coliform were documented for the La Plata River (San Juan River to McDermott Arroyo), La Plata River (McDermott Arroyo to CO border), San Juan River (Navajo Nation boundary at the Hogback to Animas River), San Juan River (Animas River to Cañon Largo), and Animas River (San Juan River to Estes Arroyo). Impairment due to selenium exceedences was determined for Gallegos Canyon (San Juan River to Navajo bnd). In 2003, SWQB performed a special study with the U.S. Department of Agriculture National Sedimentation Lab to determine potential sedimentation impairment in the San Juan River and Animas River. As a result of the study, the San Juan River (Animas River to Cañon Largo) remained listed for sedimentation/siltation (stream bottom deposits). The La Plata River (San Juan River to McDermott Arroyo) was also determined to be impaired for sedimentation/siltation based on existing assessment protocols and data collected during the survey. This total maximum daily load document addresses the above noted impairments as summarized in the tables below.

The following additional impairments were noted during the survey, but will be addressed in a separate TMDL document in the near future: low dissolved oxygen in the La Plata River (McDermott Arroyo to CO border), excessive temperature in Animas River (Estes Arroyo to CO border), and impairment of the narrative plant nutrient standard in the Animas River (San Juan River to Estes Arroyo). Additional impairments based on benthic macroinvertebrate bioassessments and ambient water and sediment toxicity were documented on stream reaches based on 2002 and 2003 data, but additional data is needed to determine the exact cause of these impairments. Portions of the San Juan River and Navajo Reservoir are also listed for mercury in fish tissue because they are on the New Mexico Fish Consumption Guidelines due to mercury contamination (NMDOH *et al.* 2001).

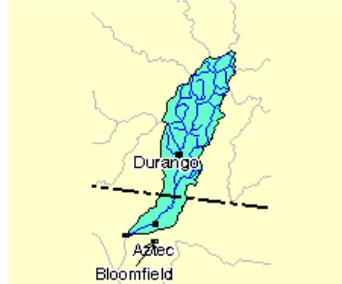
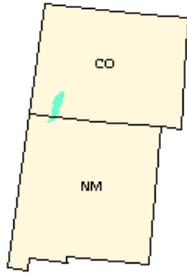
Additional water quality data will be collected by New Mexico Environment Department during the standard rotational period for intensive stream surveys. As a result, targets will be re-examined and potentially revised as this document is considered to be an evolving management

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plan. In the event that new data indicate that the targets used in this analysis are not appropriate and/or if new standards are adopted, the load capacity will be adjusted accordingly. When water quality standards have been achieved, the reach will be moved to the appropriate attainment category on the Clean Water Act Integrated §303(d)/§305(b) list of waters (NMED/SWQB 2004a).

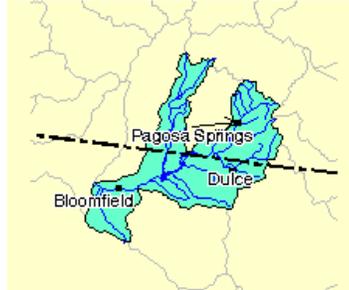
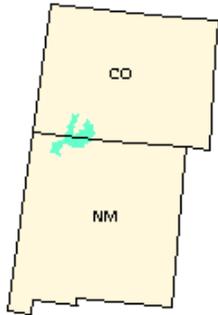
The SWQB's Watershed Protection Section has and will continue to work with the San Juan Watershed Group to complete development of Watershed Restoration Action Strategies (WRAS) in order to develop and implement strategies to attempt to correct the water quality impairments detailed in this document. Implementation of items detailed in WRAS will be done with participation of all interested and affected parties.

**TOTAL MAXIMUM DAILY LOAD FOR FECAL COLIFORM  
ANIMAS RIVER (SAN JUAN RIVER TO ESTES ARROYO)**



New Mexico Standards Segment	San Juan Basin 20.6.4.403
Assessment Unit Identifier	Animas River (San Juan River to Estes Arroyo), NM-2403.A_00 (formerly SJR4-10000)
Assessment Unit Length	16.9 miles
Parameters of Concern	Fecal Coliform
Designated Uses Affected	Marginal Coldwater Fishery
Geographic Location	Animas USGS Hydrologic Unit Code 14080104
Scope/size of Watershed	1,357 mi <sup>2</sup> (277 mi <sup>2</sup> in NM)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover (NM only)	Forest (56%), Agriculture (8%), Rangeland (29%), Built-up (5%), Barren (<1%), Water (1%), Wetlands (<1%)
Identified Sources	Drought-related Impacts, Flow Alterations from Water Diversions, Municipal (Urbanized High Density Area), Municipal Point Source Discharges, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Source Unknown, Streambank Modifications/destabilization
Land Management (NM only)	Private (34%), BLM (60%), State (6%)
Priority Ranking	High
TMDL for: Fecal Coliform	$WLA (7.58 \times 10^9) + LA (4.107 \times 10^{12}) + MOS (2.20 \times 10^{10}) = 4.40 \times 10^{11} \text{ cfu/day}$

**TOTAL MAXIMUM DAILY LOAD FOR SELENIUM  
GALLEGOS CANYON (SAN JUAN RIVER TO NAVAJO BOUNDARY)**



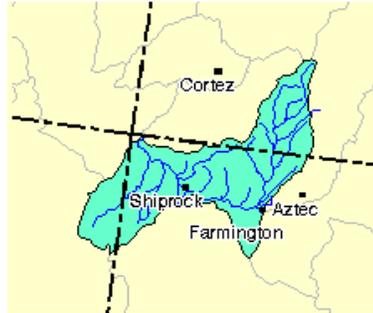
New Mexico Standards Segment	Unclassified
Assessment Unit Identifier	Gallegos Canyon (San Juan River to Navajo boundary), NM-9000.A_060 (no WBS identifier)
Assessment Unit Length	0.45 miles
Parameters of Concern	Selenium
Designated Uses Affected	Wildlife Habitat
Geographic Location	Upper San Juan USGS Hydrologic Unit Code 14080101
Scope/size of Watershed	323 mi <sup>2</sup> (entire Gallegos Canyon watershed)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover	Forest (3%), Agriculture (9%) Rangeland (86%), Built-up (<1%), Barren (1%), Water (<1%), Wetlands (<1%)
Identified Sources	Irrigated crop production, natural sources
Land Management	Native Lands (99%), BLM (<1%), State (<1%)
Priority Ranking	High
TMDL for: Selenium	<b>WLA (0) + LA (0.040) + MOS (0.014) = 0.054 lbs/day</b>

**TOTAL MAXIMUM DAILY LOAD FOR SEDIMENTATION/SILTATION AND FECAL COLIFORM  
LA PLATA RIVER (SAN JUAN RIVER TO MCDERMOTT ARROYO)**



New Mexico Standards Segment	San Juan Basin 20.6.4.402
Assessment Unit Identifier	La Plata River (San Juan River to McDermott Arroyo), NM-2402.A_00, (formerly SJR5-20100 split)
Assessment Unit Length	16.8 miles
Parameters of Concern	Sedimentation/Siltation (previously referred to as Stream Bottom Deposits) and Fecal Coliform
Designated Uses Affected	Limited Warmwater Fishery and Secondary Contact
Geographic Location	Middle San Juan USGS Hydrologic Unit Code 14080105
Scope/size of Watershed	583 mi <sup>2</sup> (162 mi <sup>2</sup> in NM)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover (NM only)	Forest (48%), Agriculture (6%), Rangeland (45%), Built-up (.1%), Barren (<1%), Water (<1%), Wetlands (<1%)
Identified Sources	Animal Feeding Operations (NPS), Drought-related Impacts, Flow Alterations from Water Diversions, Loss of Riparian Habitat, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Rangeland Grazing, Streambank Modifications/Destabilization
Land Management (NM only)	Private (29%), Native Lands (20%), BLM (45%), State (6%)
Priority Ranking	High
TMDL for:	
Sedimentation/Siltation	<b>WLA (0) + LA (17.2) + MOS (4.3) = 21.5 percent fines</b>
Fecal Coliform	<b>WLA (0) + LA (6.05 x 10<sup>8</sup>) + MOS (3.19 x 10<sup>7</sup>) = 6.37 x 10<sup>8</sup> cfu/day</b>

**TOTAL MAXIMUM DAILY LOAD FOR FECAL COLIFORM  
LA PLATA RIVER (MCDERMOTT ARROYO TO COLORADO BORDER)**



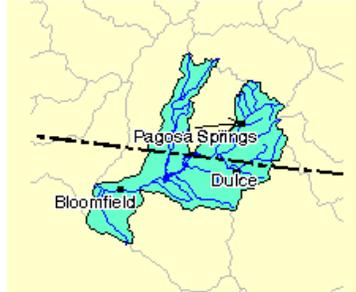
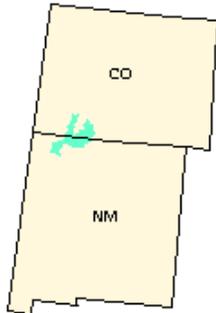
New Mexico Standards Segment	San Juan Basin 20.6.4.402
Assessment Unit Identifier	La Plata River (McDermott Arroyo to Colorado border), NM-2402.A_01, (formerly SJR5-20100 split)
Assessment Unit Length	7.1 miles
Parameters of Concern	Fecal Coliform
Designated Uses Affected	Marginal Coldwater Fishery and Secondary Contact
Geographic Location	Middle San Juan USGS Hydrologic Unit Code 14080105
Scope/size of Watershed	435 mi <sup>2</sup> (30 mi <sup>2</sup> in NM)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover (NM only)	Forest (42%), Agriculture (20%), Rangeland (37%), Built-up (1%), Barren (<1%), Water (<1%)
Identified Sources	Animal Feeding Operations (NPS), Drought-related Impacts, Flow Alterations from Water Diversions, Loss of Riparian Habitat, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Rangeland Grazing, Streambank Modifications/Destabilization
Land Management (NM only)	Private (47%), Native Lands (15%), BLM (32%), State (6%)
Priority Ranking	High
TMDL for: Fecal Coliform	<b>WLA (0) + LA (4.89 x 10<sup>8</sup>) + MOS (2.58 x 10<sup>7</sup>) = 5.15 x 10<sup>8</sup> cfu/day</b>

**TOTAL MAXIMUM DAILY LOAD FOR FECAL COLIFORM  
SAN JUAN RIVER (NAVAJO BOUNDARY AT HOGBACK TO ANIMAS RIVER)**



New Mexico Standards Segment	San Juan Basin 20.6.4.401
Assessment Unit Identifier	San Juan River (Navajo boundary at Hogback to Animas River), NM-2401_10, (formerly SJR5-20000)
Assessment Unit Length	32.27 miles
Parameters of Concern	Fecal Coliform
Designated Uses Affected	Secondary Contact
Geographic Location	Middle San Juan USGS Hydrologic Unit Code 14080105
Scope/size of Watershed	8,171 mi <sup>2</sup> (4,298 mi <sup>2</sup> in NM)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover (NM only)	Forest (52%), Agriculture (1%), Rangeland (46%), Built-up (<1%), Barren (<1%), Water (<1%), Wetlands (<1%)
Identified Sources	Drought-related Impacts, Municipal Point Source Discharges, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Rangeland Grazing
Land Management (NM only)	U.S. Forest Service (6%), Private (7%), Native Lands (45%), BLM (37%), State (5%)
Priority Ranking	High
TMDL for: Fecal Coliform	<b>WLA (2.26 x 10<sup>10</sup>) + LA (6.29 x 10<sup>11</sup>) + MOS (3.43 x 10<sup>10</sup>) = 6.86 x 10<sup>11</sup> cfu/day</b>

**TOTAL MAXIMUM DAILY LOAD FOR SEDIMENTATION/SILTATION AND FECAL COLIFORM  
SAN JUAN RIVER (ANIMAS RIVER TO CAÑON LARGO)**



New Mexico Standards Segment	San Juan Basin 20.6.4.401
Assessment Unit Identifier	San Juan River (Animas River to Cañon Largo), NM-2401_00, (formerly SJR1-10000)
Assessment Unit Length	21.44 miles
Parameters of Concern	Sedimentation/Siltation (previously referred to as Stream Bottom Deposits) and Fecal Coliform
Designated Uses Affected	Marginal Coldwater Fishery and Secondary Contact
Geographic Location	Upper San Juan USGS Hydrologic Unit Code 14080101
Scope/size of Watershed	5,825 mi <sup>2</sup> (3,533 mi <sup>2</sup> in NM)
Land Type	Arizona/New Mexico Plateau Ecoregion (22)
Land Use/Cover (NM only)	Forest (61%), Agriculture (<1%), Rangeland (38%), Built-up (1%), Barren (<1%), Water (<1%), Wetlands (<1%)
Identified Sources	Crop Production (Crop Land or Dry Land), Drought-related Impacts, Flow Alterations from Water Diversions, Loss of Riparian Habitat, Municipal Point Source Discharges, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Petroleum/natural Gas Activities (Legacy), Petroleum/natural Gas Production Activities (Permitted), Rangeland Grazing
Land Management (NM only)	U.S. Forest Service (8%), Private (7%), Native Lands (49%), BLM (31%), State (5%)
Priority Ranking	High
TMDL for:	
Sedimentation/Siltation	<b>WLA (0) + LA (23.6) + MOS (5.9) = 2.9.5 percent fines</b>
Fecal Coliform	<b>WLA (7.22 x 10<sup>9</sup>) + LA (1.73 x 10<sup>12</sup>) + MOS (9.15 x 10<sup>10</sup>) = 1.83 x 10<sup>12</sup> cfu/day</b>