



State of New Mexico
Water Quality Control Commission



2006-2008

**State of New Mexico
Integrated
Clean Water Act
§303(d)/§305(b)
Report**

Appendix B: Causes & Sources



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Cause Summary for New Mexico's Rivers and Streams

Cause of Stream/River Water Quality Impairments	Total Size (miles)
PATHOGENS Escherichia coli Fecal Coliform	315.72 159.9 155.82
BIOLOGIC INTEGRITY (BIOASSESSMENTS) Benthic-Macroinvertebrate Bioassessments (Streams) Nutrient/Eutrophication Biological Indicators	331.52 117.41 230.55
BIOASSAYS Ambient Bioassays -- Acute Aquatic Toxicity Ambient Bioassays -- Chronic Aquatic Toxicity Sediment Bioassays -- Chronic Toxicity Freshwater Sediment Bioassays -- Acute Toxicity Freshwater	109.21 50 37.51 42.29 16.92
OXYGEN DEPLETION Oxygen, Dissolved	357.13 357.13
FLOW ALTERATIONS Low flow alterations	179.73 179.73
THERMAL IMPACTS Temperature, water	992.12 992.12
NUTRIENTS (Macronutrients/Growth Factors) Ammonia (Un-ionized) Nutrient/Eutrophication Biological Indicators Nitrogen, Nitrate	244.9 52.67 230.55 14.35
TOXIC INORGANICS Aluminum Ammonia (Un-ionized) Arsenic Boron Cadmium Copper Lead Mercury Selenium Vanadium Zinc	479.25 392.11 52.67 8.58 30.18 8.58 8.58 3.56 22.18 61.86 8.58 13.84
TOXIC ORGANICS PCB in Fish Tissue PCB in Water Column	69.18 32.8 36.38
METALS Aluminum Boron Cadmium Copper	521.7 392.11 30.18 8.58 8.58

Lead	3.56
Mercury	22.18
Radium 226	31.34
Radium 228	31.34
Selenium	61.86
Vanadium	8.58
Zinc	13.84
Mercury in Fish Tissue	73.24
PESTICIDES	9
DDT in Fish Tissue	9
MINERALIZATION	898.25
Specific Conductance	344.29
Total Dissolved Solids	56
Turbidity	596.31
pH/ACIDITY/CAUSTIC CONDITIONS	87.92
pH	87.92
RADIATION	123.64
Radium 226	31.34
Radium 228	31.34
Gross Alpha	114.64
SEDIMENTATION	789.24
Sedimentation/Siltation	789.24
OTHER	669.55
Turbidity	596.31
Mercury in Fish Tissue	73.24

*This information is generated using EPA's Assessment Database Software.

**In most instances, more than a single source contributed to water quality impairment.

Where waterbodies have more than one source of impairment, the appropriate waterbody length is entered in each category.

Source Summary for New Mexico's Rivers and Streams

Sources of Stream/River Water Quality Impairments	Total Size (miles)
AGRICULTURE-ANIMAL FEEDING/HANDLING OPERATIONS (NPS - NOT REGULATED) Animal Feeding Operations (NPS) Aquaculture (Permitted) Permitted Runoff from Confined Animal Feeding Operations (CAFOs) Agriculture	185.92 28.44 30.8 96.05 30.63
AGRICULTURE-CROP PRODUCTION Irrigated Crop Production Crop Production (Crop Land or Dry Land) Agriculture	203 136.54 35.83 30.63
AGRICULTURE-GRAZING-RELATED SOURCES Rangeland Grazing Livestock (Grazing or Feeding Operations) Agriculture	1,728.35 1,697.72 28.81 30.63
ATMOSPHERIC DEPOSITION Atmospheric Deposition - Toxics	104.44 104.44
CONSTRUCTION Highways, Roads, Bridges, Infrastructure (New Construction) Site Clearance (Land Development or Redevelopment) Low Water Crossing	113.37 12.7 87.27 13.4
GROUNDWATER LOADINGS Landfills	2.21 2.21
GROUNDWATER WITHDRAWALS Baseflow Depletion from Groundwater Withdrawals	24.52 24.52
HABITAT ALTERATIONS (NOT DIRECTLY RELATED TO HYDROMODIFICATION) Channelization Dam Construction (Other than Upstream Flood Control Projects) Dredging (E.g., for Navigation Channels) Loss of Riparian Habitat Streambank Modifications/destabilization Upstream Impoundments (e.g., PI-566 NRCS Structures) Habitat Modification - other than Hydromodification	1,360.1 93.32 8.1 25.52 1,139.57 893.63 23.17 203.05
HYDROMODIFICATION Baseflow Depletion from Groundwater Withdrawals Channelization Dam Construction (Other than Upstream Flood Control	1,018.47 24.52 93.32

Projects)	8.1
Dredging (E.g., for Navigation Channels)	25.52
Flow Alterations from Water Diversions	456.22
Highway/Road/Bridge Runoff (Non-construction Related)	490.03
Upstream Impoundments (e.g., PI-566 NRCS Structures)	23.17
INDUSTRIAL PERMITTED DISCHARGES	56
Industrial Point Source Discharge	9.44
Industrial/Commercial Site Stormwater Discharge (Permitted)	25.12
Petroleum/natural Gas Production Activities (Permitted)	21.44
RCRA Hazardous Waste Sites	9.17
LAND APPLICATION/WASTE SITES	434.07
Landfills	2.21
On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	322.71
RCRA Hazardous Waste Sites	9.17
Inappropriate Waste Disposal	111.36
LEGACY/HISTORICAL POLLUTANTS	210.09
Acid Mine Drainage	8.32
Contaminated Sediments	62.14
Dredging (E.g., for Navigation Channels)	25.52
Impacts from Abandoned Mine Lands (Inactive)	37.36
Mill Tailings	55.71
Mine Tailings	52.04
Petroleum/natural Gas Activities	21.44
MUNICIPAL PERMITTED DISCHARGES (DIRECT AND INDIRECT)	429.91
Municipal (Urbanized High Density Area)	148.37
Municipal Point Source Discharges	341.65
Post-development Erosion and Sedimentation	68.66
RCRA Hazardous Waste Sites	9.17
STORMWATER PERMITTED DISCHARGES (DIRECT AND INDIRECT)	783.73
Highway/Road/Bridge Runoff (Non-construction Related)	490.03
Highways, Roads, Bridges, Infrastructure (New Construction)	12.7
Industrial/Commercial Site Stormwater Discharge (Permitted)	25.12
Municipal (Urbanized High Density Area)	148.37
Petroleum/natural Gas Production Activities (Permitted)	21.44
Post-development Erosion and Sedimentation	68.66
Site Clearance (Land Development or Redevelopment)	87.27
NATURAL	1,128.24
Drought-related Impacts	122.27
Waterfowl	96.05
Wildlife Other than Waterfowl	122.92
Natural Sources	969.82

RECREATION AND TOURISM (NON-BOATING)	598.2
Off-road Vehicles	150.51
Other Recreational Pollution Sources	490.44
Low Water Crossing	13.4
RESOURCE EXTRACTION	176.68
Impacts from Abandoned Mine Lands (Inactive)	37.36
Mill Tailings	55.71
Mine Tailings	52.04
Placer Mining	2.75
Surface Mining	85.65
Reclamation of Inactive Mining	16.17
SILVICULTURE-LARGE-SCALE (INDUSTRIAL) FORESTRY	638.37
Forest Roads (Road Construction and Use)	83.46
Silviculture Harvesting	110.26
Silviculture, Fire Suppression	274.05
Watershed Runoff following Forest Fire	190.45
SILVICULTURE-NON-INDUSTRIAL FORESTRY (WOODLOTS)	464.5
Silviculture, Fire Suppression	274.05
Watershed Runoff following Forest Fire	190.45
SPILLS AND UNPERMITTED DISCHARGES	111.36
Other Spill Related Impacts	9
Inappropriate Waste Disposal	111.36
URBAN-RELATED RUNOFF/STORMWATER (OTHER THAN REGULATED DISCHARGES)	831.94
Highway/Road/Bridge Runoff (Non-construction Related)	490.03
Highways, Roads, Bridges, Infrastructure (New Construction)	12.7
Industrial/Commercial Site Stormwater Discharge (Permitted)	25.12
Municipal (Urbanized High Density Area)	148.37
Post-development Erosion and Sedimentation	68.66
Site Clearance (Land Development or Redevelopment)	87.27
Wastes from Pets	96.05
Impervious Surface/Parking Lot Runoff	166.05
OTHER	1,624.06
Source Unknown	433.01
Natural Sources	969.82
Agriculture	30.63
Habitat Modification - other than Hydromodification	203.05
Silviculture, Fire Suppression	274.05
Watershed Runoff following Forest Fire	190.45
Low Water Crossing	13.4

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Cause Summary for New Mexico's Lakes and Reservoirs

Causes of Lake Reservoir Water Quality Impairments	Total Size(acres)
BIOLOGIC INTEGRITY (BIOASSESSMENTS) Nutrient/Eutrophication Biological Indicators	4,427.27 4,427.27
BIOASSAYS Sediment Bioassays -- Chronic Toxicity Freshwater	1,874.76 1,874.76
OXYGEN DEPLETION Oxygen, Dissolved	1,406.77 1,406.77
THERMAL IMPACTS Temperature, water	68.37 68.37
NUTRIENTS (Macronutrients/Growth Factors) Nutrient/Eutrophication Biological Indicators	4,427.27 4,427.27
TOXIC INORGANICS Aluminum Arsenic Copper	5,289.48 3,760.75 1,517.57 11.16
TOXIC ORGANICS PCB in Fish Tissue	1,038.35 1,038.35
METALS Aluminum Copper Mercury in Fish Tissue	52,558.35 3,760.75 11.16 52,547.19
PESTICIDES DDT in Fish Tissue	3,058.67 3,058.67
pH/ACIDITY/CAUSTIC CONDITIONS pH	129.31 129.31
SEDIMENTATION Sedimentation/Siltation	3,890.54 3,890.54
OTHER Mercury in Fish Tissue Other	52,549.19 52,547.19 2

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Source Summary for New Mexico's Lakes and Reservoirs

Sources of Lake Reservoir Water Quality Impairments	Total Size (acres)
AGRICULTURE-ANIMAL FEEDING/HANDLING OPERATIONS (NPS - NOT REGULATED) Agriculture	68.37 68.37
AGRICULTURE-CROP PRODUCTION Agriculture Pesticide Application	79.53 68.37 11.16
AGRICULTURE-GRAZING-RELATED SOURCES Rangeland Grazing Agriculture	5,739.2 5,670.83 68.37
ATMOSPHERIC DEPOSITION Atmospheric Deposition - Toxics	51,649.89 51,649.89
HABITAT ALTERATIONS (NOT DIRECTLY RELATED TO HYDROMODIFICATION) Loss of Riparian Habitat Streambank Modifications/destabilization Habitat Modification - other than Hydromodification	4,297.96 4,281.83 4,274.15 39.94
HYDROMODIFICATION Highway/Road/Bridge Runoff (Non-construction Related)	3,809.83 3,809.83
INDUSTRIAL PERMITTED DISCHARGES Petroleum/natural Gas Production Activities (Permitted)	430 430
LAND APPLICATION/WASTE SITES On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) Inappropriate Waste Disposal	2,395.97 1,357.62 1,038.35
LEGACY/HISTORICAL POLLUTANTS Contaminated Sediments Petroleum/natural Gas Activities	1,333.11 1,038.35 294.76
STORMWATER PERMITTED DISCHARGES (DIRECT AND INDIRECT) Highway/Road/Bridge Runoff (Non-construction Related) Petroleum/natural Gas Production Activities (Permitted)	4,239.83 3,809.83 430
NATURAL Wildlife Other than Waterfowl Natural Sources	2,451.08 1,333.81 2,451.08

RECREATION AND TOURISM (NON-BOATING) Other Recreational Pollution Sources	164.26 164.26
RESOURCE EXTRACTION Subsurface (Hardrock) Mining Potash Mining	2,513.81 1,333.81 1,180
SILVICULTURE-LARGE-SCALE (INDUSTRIAL) FORESTRY Silviculture Harvesting Silviculture, Fire Suppression Watershed Runoff following Forest Fire	66.33 50 14.33 2
SILVICULTURE-NON-INDUSTRIAL FORESTRY (WOODLOTS) Silviculture, Fire Suppression Watershed Runoff following Forest Fire	16.33 14.33 2
SPILLS AND UNPERMITTED DISCHARGES Inappropriate Waste Disposal	1,038.35 1,038.35
TURF MANAGEMENT Pesticide Application	11.16 11.16
URBAN-RELATED RUNOFF/STORMWATER (OTHER THAN REGULATED DISCHARGES) Highway/Road/Bridge Runoff (Non-construction Related) Impervious Surface/Parking Lot Runoff	3,889.14 3,809.83 3,851
OTHER Source Unknown Natural Sources Agriculture Habitat Modification - other than Hydromodification Silviculture, Fire Suppression Watershed Runoff following Forest Fire	53,915.82 53,769.3 2,451.08 68.37 39.94 14.33 2

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