

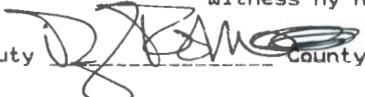
**BEFORE THE BOARD OF COUNTY COMMISSIONERS
OF SAN MIGUEL COUNTY, NEW MEXICO**

COUNTY OF SAN MIGUEL)
STATE OF NEW MEXICO) ss

SAN MIGUEL COUNTY
PAGES: 68

IN THE MATTER OF ADOPTING AN
AMENDMENT TO THE SAN MIGUEL
COUNTY COMPREHENSIVE PLAN, TO
BE KNOWN AS THE OIL AND GAS
ELEMENT

I Hereby Certify That This Instrument Was Filed for
Record On The 13TH Day Of November, 2014 at 02:19:31 PM
And Was Duly Recorded as Instrument #201403502
Of The Records Of San Miguel

Witness My Hand And Seal Of Office
Melanie Y. Rivera
Deputy  County Clerk, San Miguel, NM

**RESOLUTION NO. 11-12-14-CP,
ADOPTING AN OIL AND GAS ELEMENT AMENDMENT
TO THE SAN MIGUEL COUNTY COMPREHENSIVE PLAN**

IT APPEARING to the Board of County Commissioners of San Miguel County, New Mexico, that by Resolution No.10-14-14-OG&CP, adopted by the Board of Commissioners on October 14, 2014, and filed for record in the office of the San Miguel County Clerk on October 15, 2014, as Instrument No. 201403180, the Board of Commissioners proposed an amendment to the San Miguel County Comprehensive Plan, to be known as the Oil and Gas Element, Exhibit "B" to said Resolution No. 10-14-14-OG&CP; and

IT APPEARING further to the Board of Commissioners, that a summary of the subject matter of said Oil and Gas Element Amendment was published in the Las Vegas Optic on October 15 2014, together with Notice of a public hearing on said Amendment to be held November 03, 2014, and Notice that said Amendment would be considered for final passage at today's regular monthly meeting, all pursuant to

Resolution No. 10-14-14-OG&CP, which Resolution is adopted by reference and incorporated herein as if set forth in full; and

IT APPEARING further to the Board of Commissioners, that on Monday, November 03, 2014, a public hearing was held and conducted by the Board on said proposed Oil and Gas Element Amendment, in addition to many meetings and public hearings held previously in relation thereto, as set forth in Resolution No. 10-14-14-OG&CP, and in Resolution No. 05-13-14-P&Z, adopted by the Board of Commissioners on May 13, 2014, and filed for record in the office of the San Miguel County Clerk on May 14, 2014, as Instrument No. 201401510, which Resolution is adopted by reference and incorporated herein as if set forth in full; and

IT APPEARING further to the Board of Commissioners that in public session at today's regular monthly meeting, the Board considered and deliberated upon the public comments and data presented at its public hearing held November 03, 2014, and took formal action thereon prior to adoption of this Resolution, as shall appear in the record and minutes of this meeting, which formal action, if any, shall be incorporated into and made a part of the Oil and Gas Element Amendment to the San Miguel County Comprehensive Plan, which Oil and Gas Element Amendment follows this Resolution and is annexed hereto as the Oil and Gas Element of the San Miguel County Comprehensive Plan; it is now, therefore,

RESOLVED AND DETERMINED, by the Board of County Commissioners of San Miguel County, New Mexico, pursuant to and in accordance with a roll call vote of each Commissioner, that the San Miguel County Comprehensive Plan adopted June 08, 2004, is hereby amended to include the Oil and Gas Element which follows and is

annexed to this adopting Resolution, which Oil and Gas Element is hereby enacted and adopted by the Board of County Commissioners, who concurrently herewith have affixed their signatures to said Oil and Gas Element amendment, which shall become effective immediately upon adoption and final passage of this Resolution.

MOVED, SECONDED AND ADOPTED in public session by the Board of County Commissioners of San Miguel County, New Mexico, at its regular monthly meeting held this 12th day of November, 2014, at Las Vegas, New Mexico.



Nicolas T. Leger, Chairman



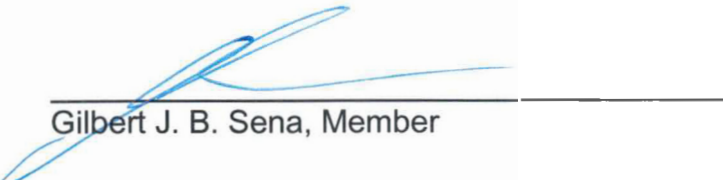
Ron R. Ortega, Vice Chairman



Marcellino A. Ortiz, Member



Arthur J. Padilla, Member



Gilbert J. B. Sena, Member

Submitted:



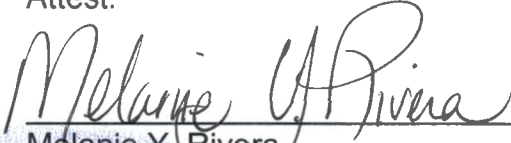
Les Montoya
San Miguel County Manager

Approved as to Form:



Jesus L. Lopez
San Miguel County Attorney

Attest:



Melanie Y. Rivera
San Miguel County Clerk

(SEAL)

San Miguel County Comprehensive Plan

Oil and Gas Element



Amendment to San Miguel County Comprehensive Plan 2004-2014

November 12, 2014

COUNTY OF SAN MIGUEL)
STATE OF NEW MEXICO) ss

SAN MIGUEL COUNTY
PAGES: 68

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Oil and Gas Plan Element

This element is an amendment to the San Miguel County Comprehensive Plan 2004-2014, adopted by the Board of County Commissioners on June 8, 2004.

The purpose of this element is to provide information on existing conditions, identify concerns regarding oil and gas development that the County needs to address, determine implementation measures (primarily the oil and gas ordinance), develop goals and policies to guide implementation of the oil and gas ordinance and other implementation actions.

A. Introduction

San Miguel County has the potential for oil and gas development that could have various positive and negative impacts on the county's economy and environment which it wants to be prepared to handle. The County has been working for four years on an oil and gas ordinance. Over the past two years, the County has worked with Freilich & Popowitz LLP to develop the ordinance. Architectural Research Consultants, Incorporated (ARC) has provided services to the County by developing maps to support the ordinance (July 2013) and documenting public hearing testimony at a series of public hearings conducted by the Board of County Commissioners during summer 2014. ARC and Freilich & Popowitz have collaborated to prepare this plan element.

The purpose of the element is to provide information on existing conditions; identify concerns regarding oil and gas development that the County needs to address; determine implementation measures (primarily the oil and gas ordinance); and develop goals and policies to guide implementation of the oil and gas ordinance. It also presents other implementation actions, including providing context and policy guidance for the conditional use permit process specified in the oil and gas ordinance and subsequent ministerial grading and building permits, certificates of completion, monitoring, inspection and enforcement. In addition, the Oil and Gas Element provides guidance on both current and future zoning maps related to oil and gas, any future Mora-Canadian River Basin water plans, and future capital improvements programs (CIPs). This element also briefly describes the problems and advantages of hydraulic fracturing (fracking) nationally and internationally.

B. Existing Conditions

Oil and Gas Resource and Potential for Extraction

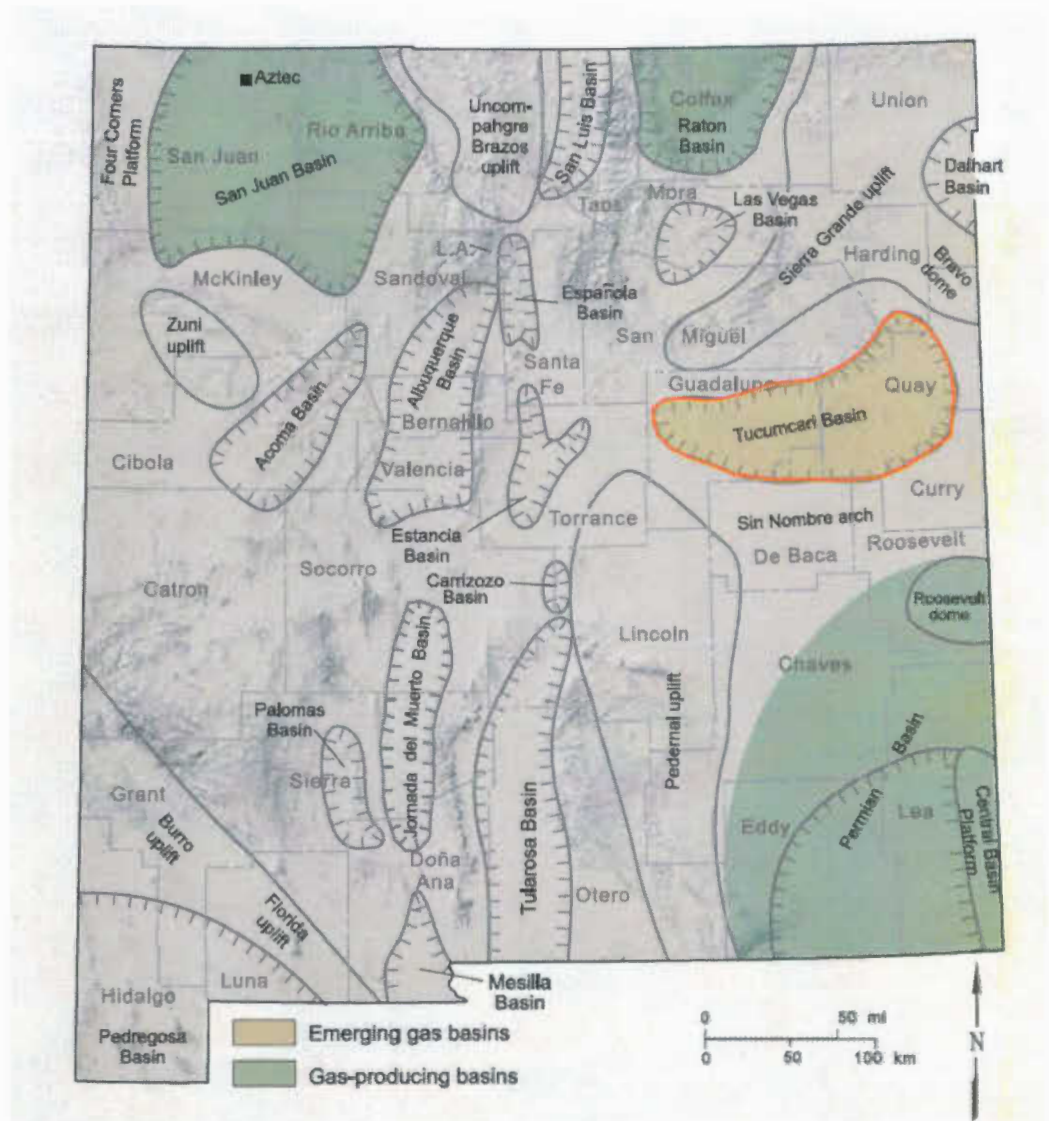
New Mexico has a long history of mining and extraction of oil and gas. San Miguel County is partially within the identified Sierra Grande Uplift basin. Some studies have also identified the Las Vegas Basin in Mora and San Miguel Counties for potential natural gas and oil.¹ Experts have studied both basins, but they do not currently produce oil and gas, and are not identified as "emerging basins" for natural gas.

The county is partially within the Tucumcari Basin, which is an "emerging basin." It may be an important play that could replace production from the current large-

¹ Baltz, F. H., and Myers, D. A., 1999, Stratigraphic framework of upper Paleozoic rocks, southeastern Sangre de Cristo Mountains, New Mexico, with a section on speculations and implications for regional interpretation of Ancestral Rocky Mountains paleotectonics: *New Mexico Bureau of Mines and Mineral Resources, Memoir 48*, 269 pp.

producing basins in New Mexico that may become depleted.
 The map below shows natural gas resources throughout New Mexico.

Exhibit 1
 Natural Gas
 Basins in New
 Mexico



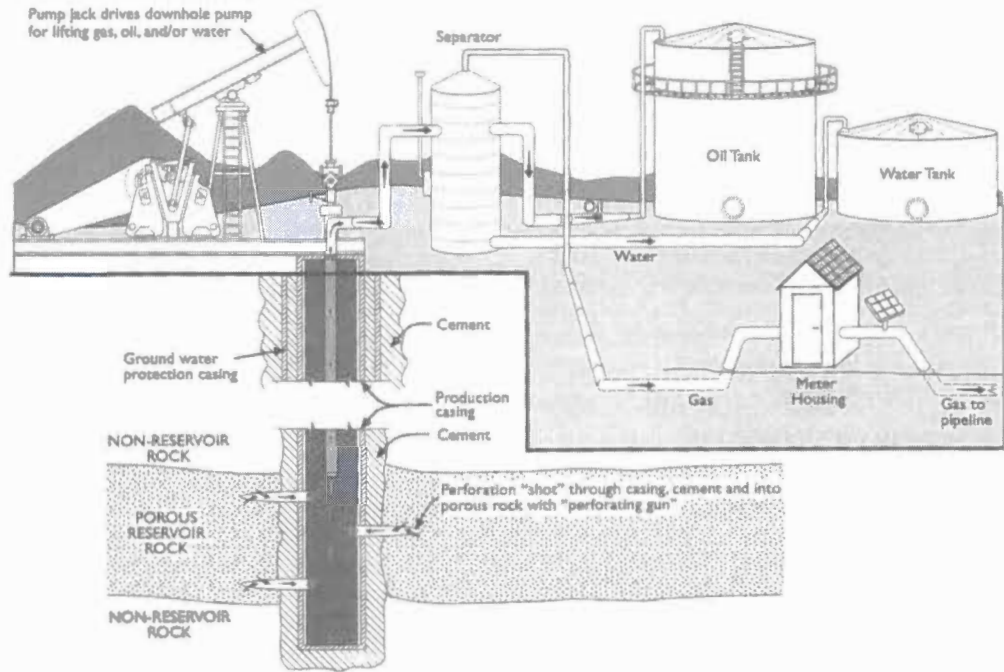
Source: New Mexico Bureau of Geology and Mineral Resources, New Mexico Earth Matters, Winter 2012.

Oil and Gas Technology Overview

Natural gas and crude oil naturally reside in underground reservoirs. Crude oil, typically liquid at surface temperature and pressure, is a complex mix of hydrocarbon molecules and non-hydrocarbon molecules. Crude oil is a reservoir that often contains light hydrocarbons that bubble out of the oil as natural gas at the surface. Natural gas may or may not be associated with oil. It is a mixture of light hydrocarbons including methane, ethane, propane, and butane. It also may contain variable amounts of nitrogen, carbon dioxide, hydrogen sulfide, and perhaps traces of other gases such as helium.

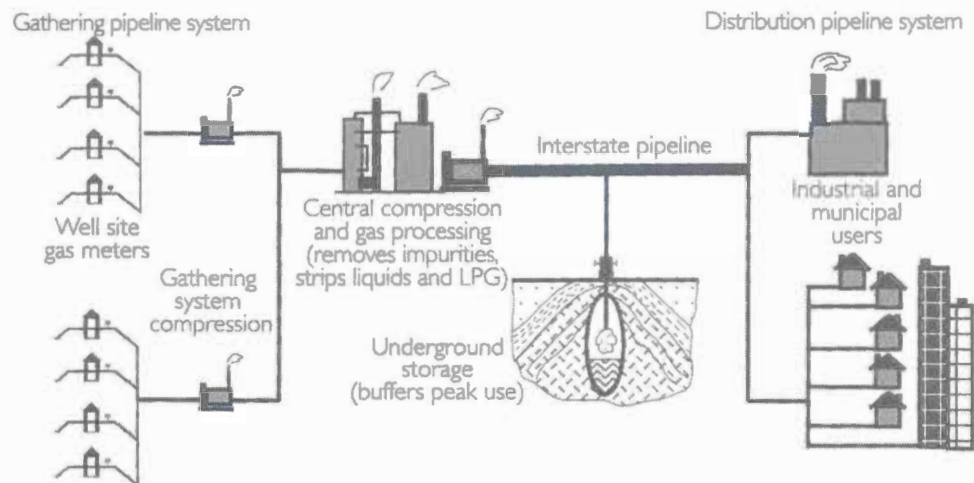
The following diagrams show the “upstream” and “downstream” infrastructure of oil and natural gas production. Upstream operations involve extracting crude oil or natural gas from a natural underground reservoir and delivering it to a point near the well site, such as an oil tank or gas meter. Downstream operations include gathering, transporting and processing of the oil or natural gas and distributing the final products.²

Exhibit 2
Upstream
Infrastructure of
Oil and Natural
Gas Production



Source: *New Mexico's Energy, Present and Future: Policy, Production, Economics and the Environment*

Exhibit 3
Downstream
Infrastructure of
Oil and Natural
Gas Production



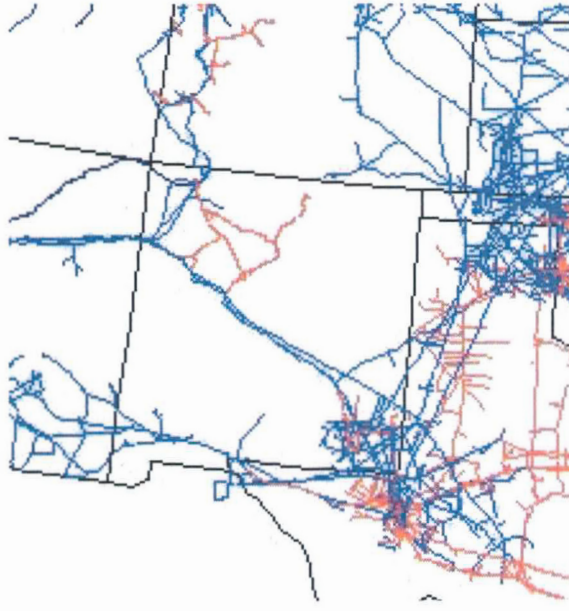
Source: *New Mexico's Energy, Present and Future: Policy, Production, Economics and the Environment*

² *New Mexico's Energy, Present and Future: Policy, Production, Economics and the Environment*, Brian S. Brister and L. Greer Price (editors), New Mexico Bureau of Geology and Mineral Resources, 2002.

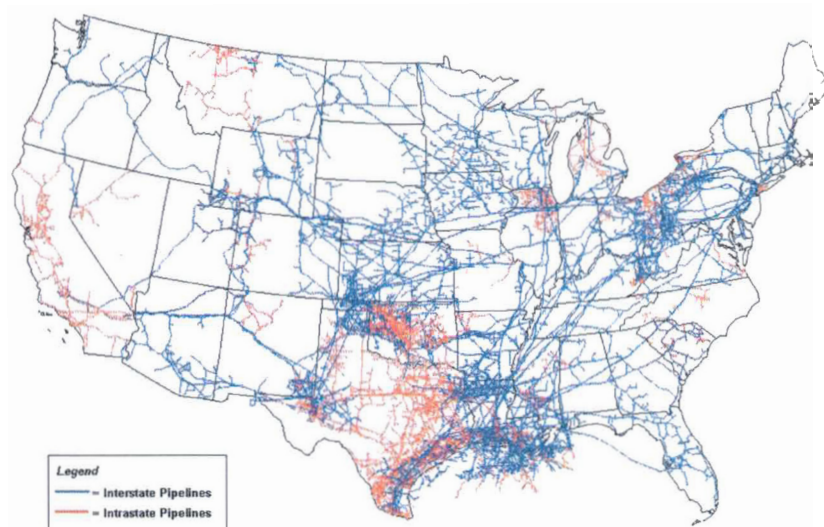
Natural Gas Pipeline Network

The U.S. natural gas pipeline network map below shows an interstate pipeline (in blue) that traverses New Mexico from southeast to northwest, without passing through San Miguel County. The closest transmission line appears to be over 100 miles away. A NuStar Energy, L.P. line traverses northern Guadalupe County and may also carry petroleum products (not shown on maps below). Natural gas requires processing to remove impurities before it enters a pipeline for distribution to consumers. Significant development of any natural gas resource in San Miguel County would require construction of a processing plant, another significant facility and infrastructure investment.

Exhibit 4
Natural Gas Pipeline Network
- New Mexico (right) and U.S. (below)



U.S. Natural Gas Pipeline Network, 2009



Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System

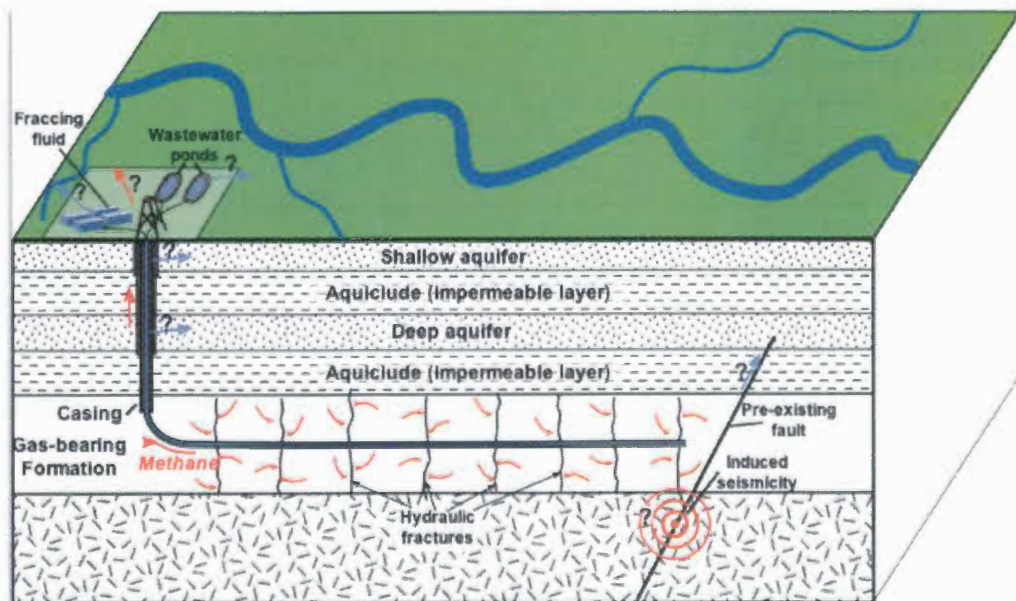
Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System, 2009

Hydraulic Fracturing

Hydraulic fracturing (fracking) is a technique in which a high-pressure fluid (usually water mixed with sand and chemicals) is injected into a wellbore to create small fractures (usually less than 1.0 mm wide) in deep rock formations to allow natural gas, petroleum, and brine to migrate to the well. When the hydraulic pressure is removed from the well, small grains of hydraulic fracturing proppants (either sand or aluminium oxide) hold open the small fractures once the deep rock achieves geologic equilibrium. This technique, used in conjunction with horizontal drilling, has allowed for oil and gas production to increase dramatically. For this reason, it has been extremely popular in recent years. Fracking uses a lot of water and generates large quantities of wastewater. Blasting water, sand and chemicals into underground rock formations can cause “microquakes” that are rarely strong enough to register on seismicity monitoring equipment.

Health risks associated with fracking are under continuing study. In some cases, fracking fluids have entered potable water supplies, or have become airborne and threatened the health of nearby residents.

Exhibit 5
Hydraulic
Fracturing and
Horizontal
Drilling Diagram



Source: Mike Norton, "HydroFrac2," <http://commons.wikimedia.org/wiki/File:HydroFrac2.svg>

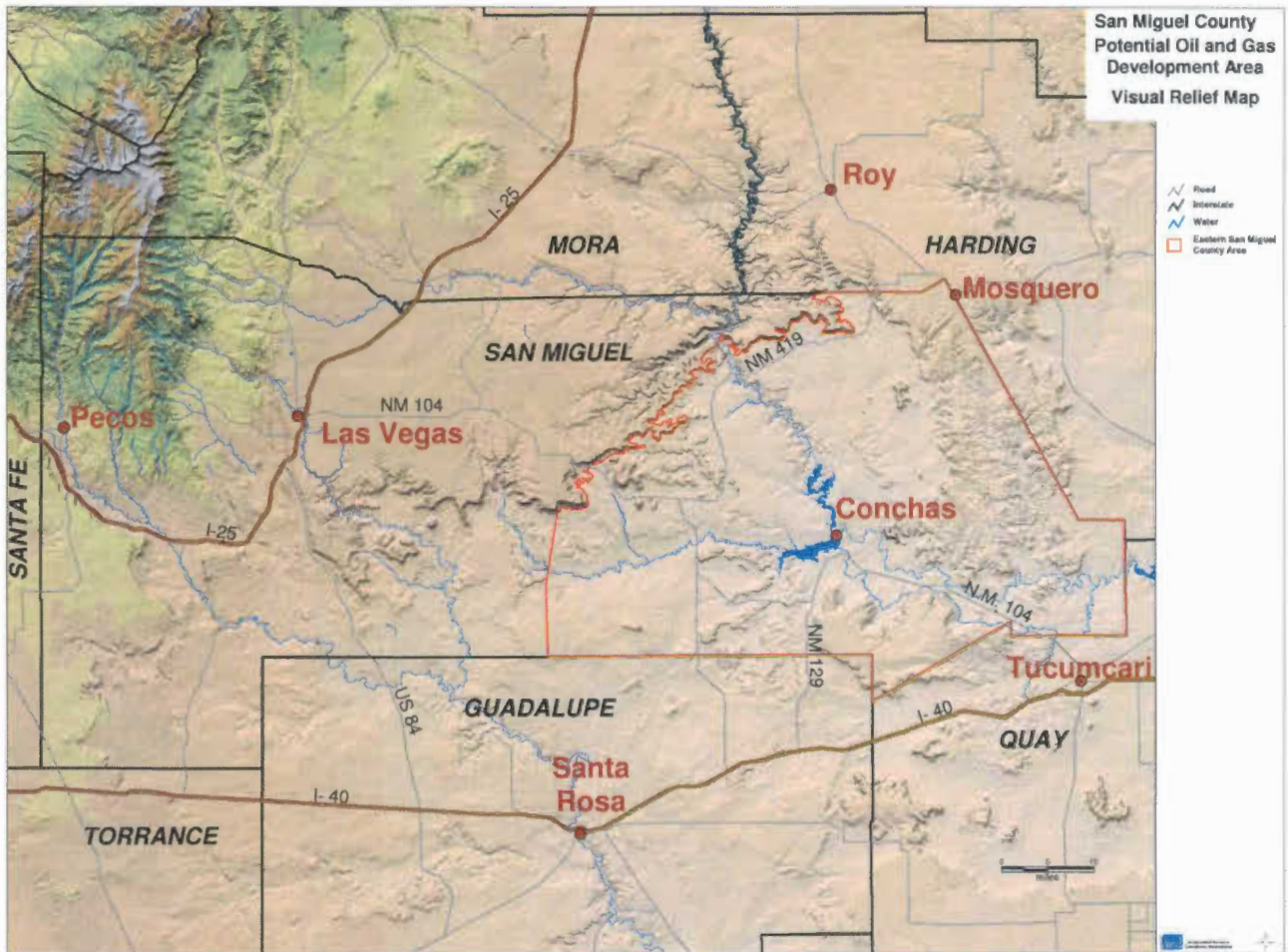
Environmental and Cultural Resources in Eastern San Miguel County

This section presents map analyses of environmental and cultural resources in eastern San Miguel County. According to the Issues and Opportunities Section which describes in detail the **area** where oil and gas development may occur, it is located in the eastern portion of the county. Consequently, the focus of the maps analyses is this geographic area. These maps are on the following pages:

1. Base Map
2. Land Status
3. Surface Waterways and Structure Address Points
4. Watersheds
5. Groundwater Resources
6. Aquifer Sensitivity
7. Geology
8. Vegetative Coverage
9. Wildlife Habitat
10. Threatened and Endangered Species
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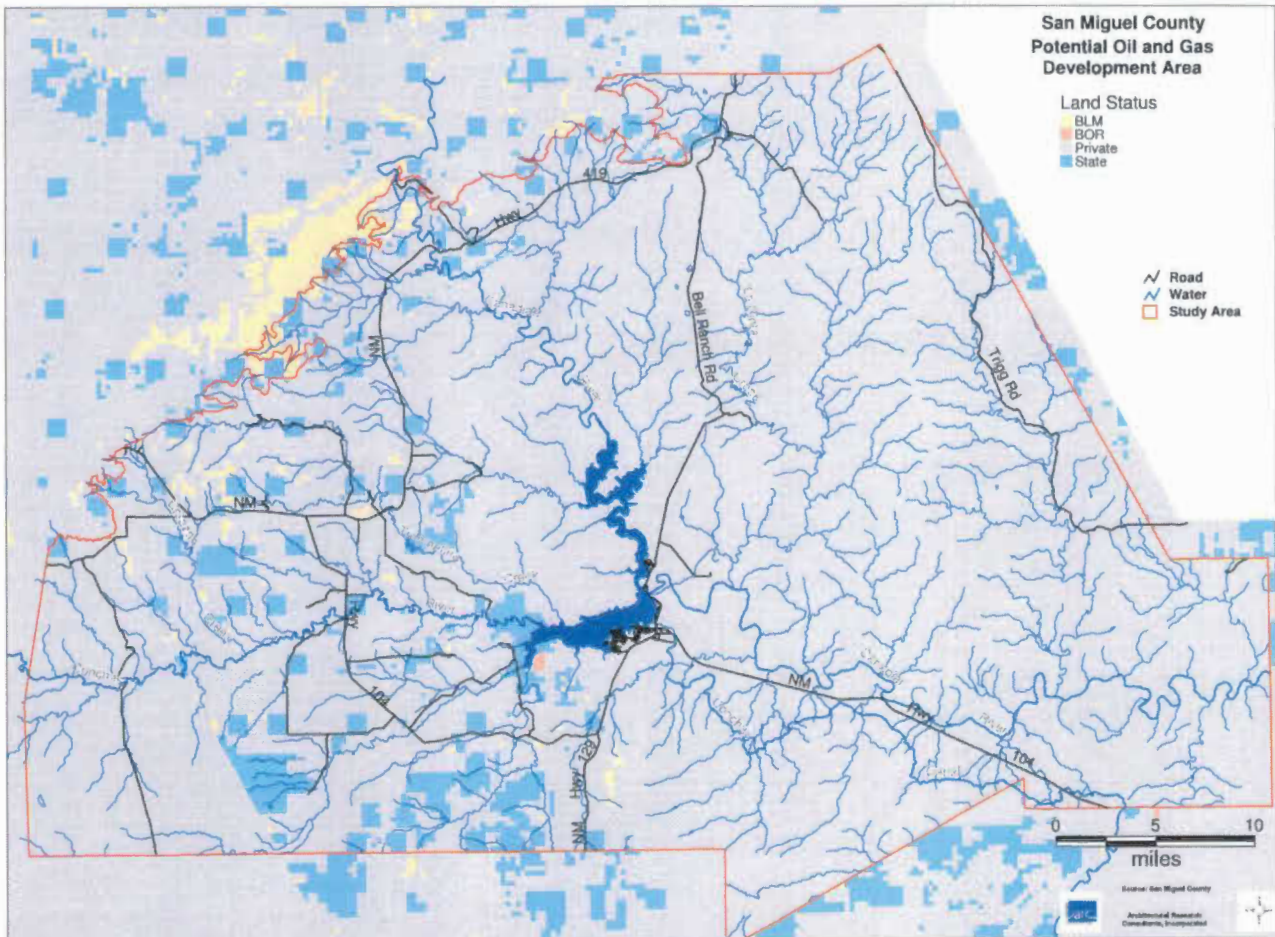
1. Base Map

San Miguel County delineated an area in the eastern portion of the county where oil and gas development is permitted, subject to the discretionary approval of a conditional use permit. The area generally follows the north and western escarpment which the Canadian River crosses from the northern county line, then drops straight south to the southern county line. The eastern area of San Miguel County encompasses 1,782 square miles. The entire county encompasses 4,536 square miles.



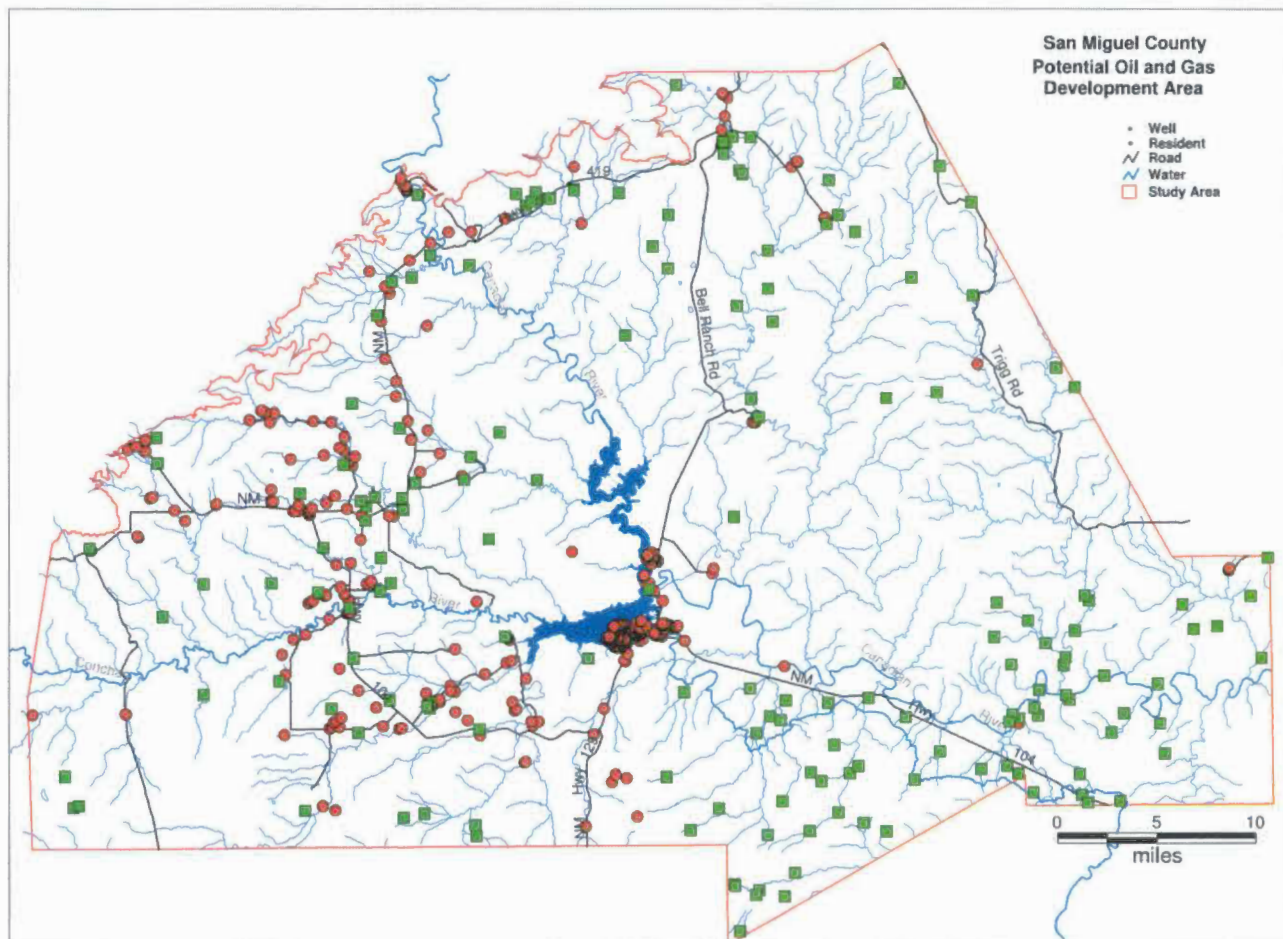
2. Land Status

Most of the delineated area is private land. New Mexico State Land Office and Bureau of Land Management properties are located mainly to the west of Conchas Reservoir. The Bureau of Reclamation manages federal land adjacent to Conchas Reservoir.



3. Surface Waterways and Structure Address Points

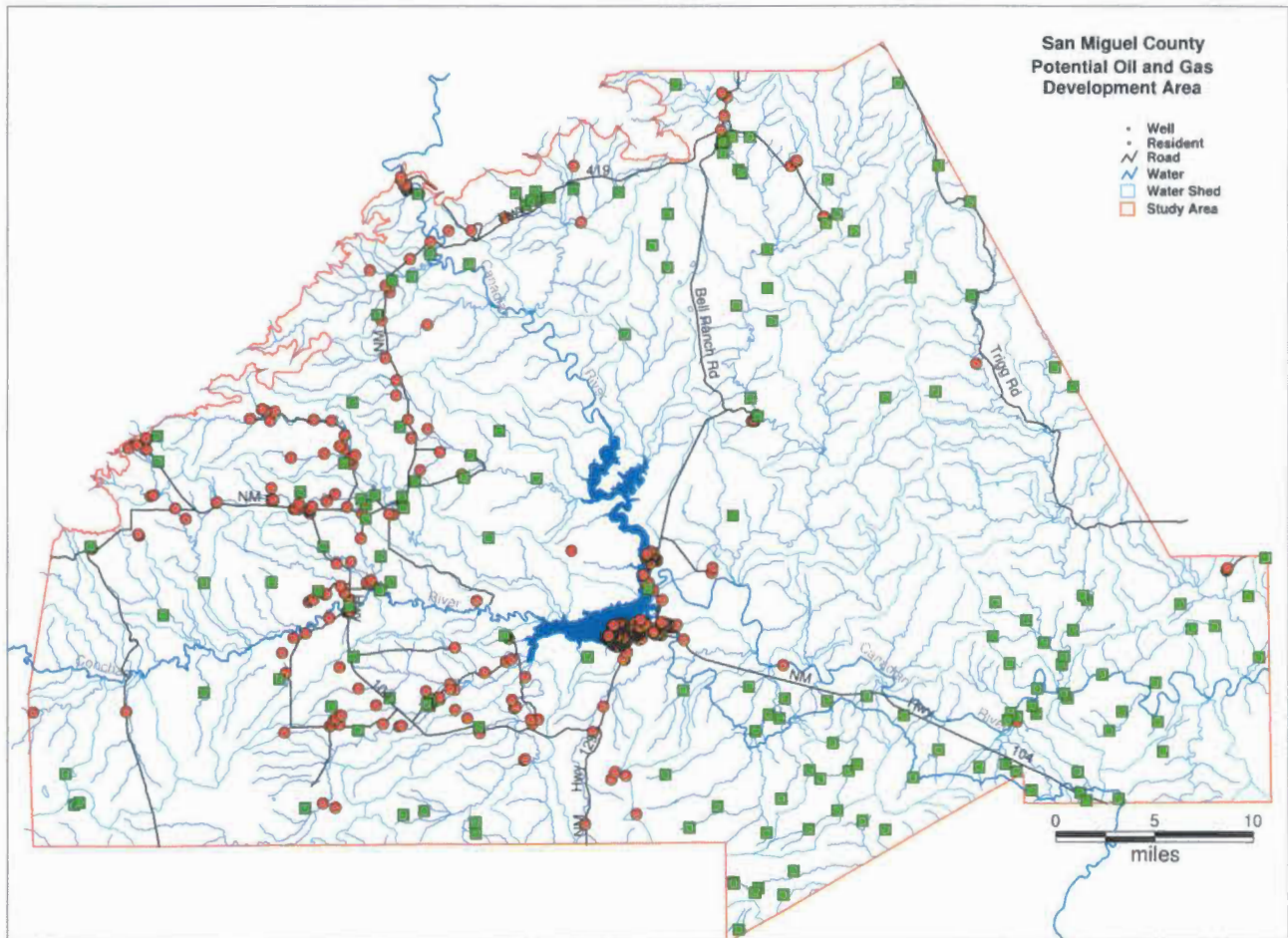
The entire area is within the Canadian River basin. Major drainages are the Canadian River and Conchas River, which converge in Conchas Reservoir. The Canadian River is a permanent stream, while the Conchas River is intermittent. Various ephemeral creeks and arroyos drain into these rivers. The following map also shows water wells and residential address points for context.



(Map sources: San Miguel County with additional data from U.S. Census Tiger mapping)

4. Watersheds

The following map shows individual drainage watersheds.



(Map source: San Miguel County)

5. Groundwater Resources

A large portion of eastern San Miguel County is not a declared groundwater basin. To the east of Conchas Reservoir is part of the declared Tucumcari groundwater basin. On northern edge of eastern San Miguel County is the declared Canadian River groundwater basin.³

Canadian River Basin

According to the Mora-San Miguel-Guadalupe Regional Water Plan, the Canadian River Basin covers approximately the western half of Mora County and a small portion of northern San Miguel County within the planning region. The State Engineer declared the basin in 1973, but has not developed administrative criteria for this basin, and the water rights in Mora and San Miguel Counties have not been adjudicated.⁴ The Office of State Engineer evaluates applications to appropriate groundwater to determine whether water is available for appropriation and whether granting an application would be in

³ (Source: Mora-San Miguel-Guadalupe County Regional Water Plan, prepared for Tierra y Montes Soil and Water Conservation District and the Mora-San Miguel-Guadalupe Regional Water Planning Steering Committee by Daniel B. Stephens & Associates, Inc., June 2005, Figure 4-1, page 4-2)

⁴ 19.27.25 NMAC

keeping with conservation and the protection of public welfare. Additionally, new appropriations may not impair existing senior water right holders.⁵

Nevertheless, the New Mexico Office of the State Engineer is not likely to grant applications to appropriate water because the groundwater in the basin is stream-connected; that is, groundwater pumping close to the river will immediately decrease streamflow. Groundwater pumping far from the river may not affect the river for many years, but the State Engineer recognizes these long-term hydrologic impacts and manages the basin accordingly. To keep the river system intact, the State Engineer requires offsets; that is, surface water rights must be purchased and retired to offset the effects of any proposed groundwater pumping. If an applicant shows that a proposed groundwater diversion would have no impact to the river at any time, then the State Engineer should approve the application, assuming that the other criteria for approval (no impairment, not contrary to conservation, and not detrimental to the public welfare) are met.⁶

Tucumcari Basin

The Tucumcari Basin comprises approximately 5,300 square miles in San Miguel, Guadalupe, Curry, Colfax, Union, and Harding Counties. The State Engineer originally declared 177 miles of the basin in 1982 and significantly expanded it in 1998.⁷ The extension covered a previously undeclared area within the surface drainage of the Canadian River below Conchas Lake, including Ute Creek. The State has not adjudicated water rights in the Tucumcari Basin.

The State Engineer has no unique administrative criteria for the Tucumcari Basin. It evaluates water rights applications to determine whether application approval will impair existing water rights, be detrimental to the public welfare, or contrary to the conservation of water.⁸

Mining Use of Groundwater

Under New Mexico law, most mining uses, including oil and natural gas well production, are often exempt from the requirement to apply for water rights, since mining is not considered a consumptive use. Nonetheless, mining, and oil and natural gas production may use water in such a manner that affects nearby wells, and the State Engineer may require the companies to provide an alternative water supply to nearby land owners if affected. Alternately, the water wells for oil and gas operations may be sufficiently deeper than domestic and other wells, and therefore may not impact nearby wells.

Depth to Groundwater

The U.S. Geological Survey (USGS), in cooperation with San Miguel County, conducted a study during 2010–11 to assess current publicly available information regarding the hydrologic resources of San Miguel County. That study used groundwater-well data for wells drilled between 1973 and 2010 from two sources: information about San Miguel County groundwater wells archived in the State of New Mexico Water Rights Reporting System's online database and information about groundwater wells archived in the National Water Information System of the U.S. Geological Survey. The collected data provide information regarding depth to groundwater and depth of well completions in the context of physiographic features of the county.

Griggs and Hendrickson (1951) identified two physiographic areas within the potential oil and gas development area of eastern San Miguel County: Area 3, comprising the plains and southern hogback

⁵ NMSA 1978, § 72-12-3

⁶ NMSA 1978, § 72-12-3

⁷ 19.27.56 NMAC

⁸ NMSA 1978, § 72-12-3

monocline, located in the central and eastern parts of the county; and Subarea 4a, Las Vegas Plateau physiographic area.⁹

The USGS National Water Information System database contained 51 groundwater-well records within eastern San Miguel County. USGS designated 44 of the wells as shallow and seven as moderately deep.

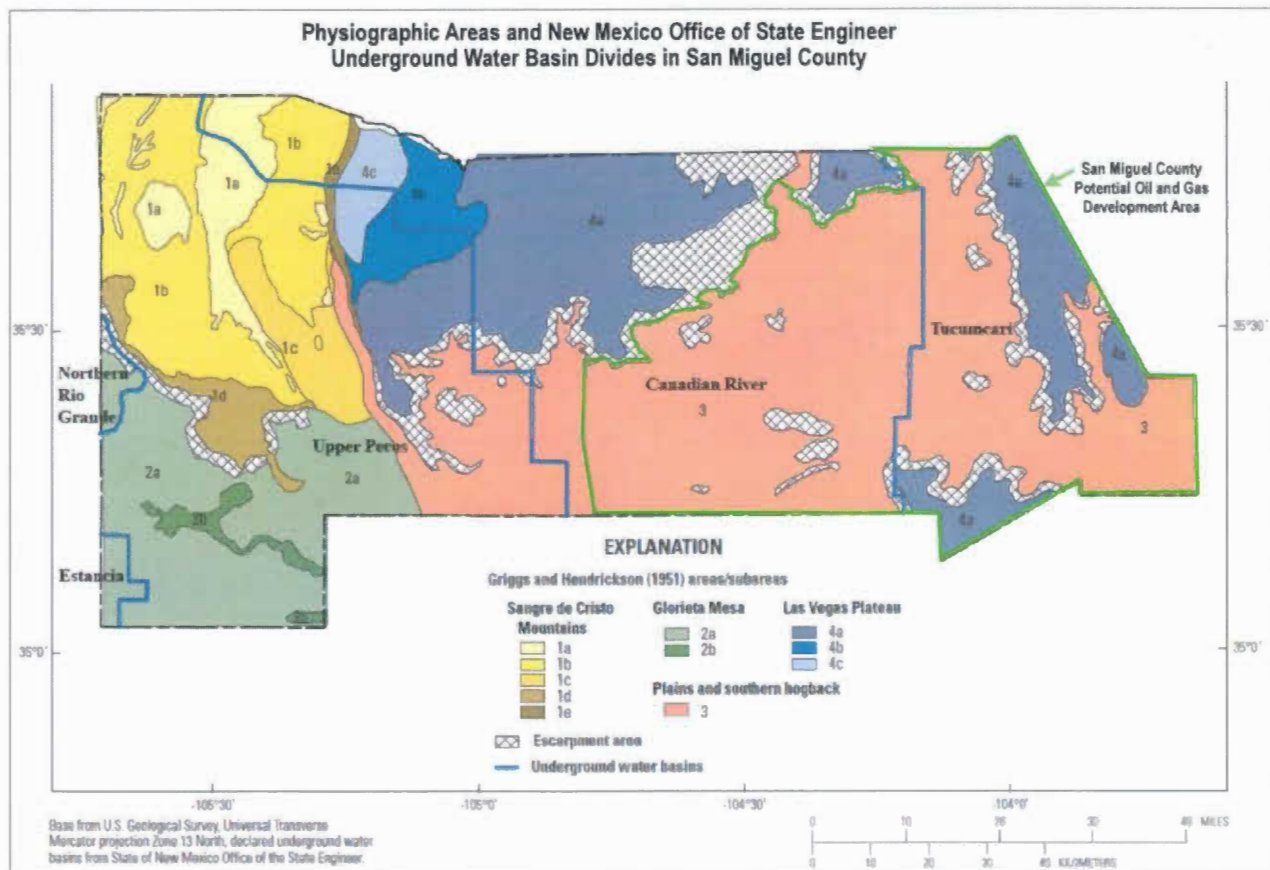
Exhibit 6
Depth to Groundwater

Depth to Groundwater for Wells Drilled Between 1973 and 2010 in Eastern San Miguel County Area

	Number of Wells in Database	Average Depth to Water On Date Well Was Drilled	Average Total Depth of Well
Shallow Wells	44	55.1	156.1
Moderately Deep Wells	7	197.4	403.4
Total	51	74.6	190.0

Source: U.S. Geological Survey, Groundwater-Well Data of San Miguel County, New Mexico, 1970-2010, Data Series 686, Table 1

Depth to water varied from 18' to 180' for shallow wells, and from 80' to 550' for moderately deep wells. The total depth of wells varied from 35' to 300' for shallow wells, and from 310' to 600' for moderately deep wells.

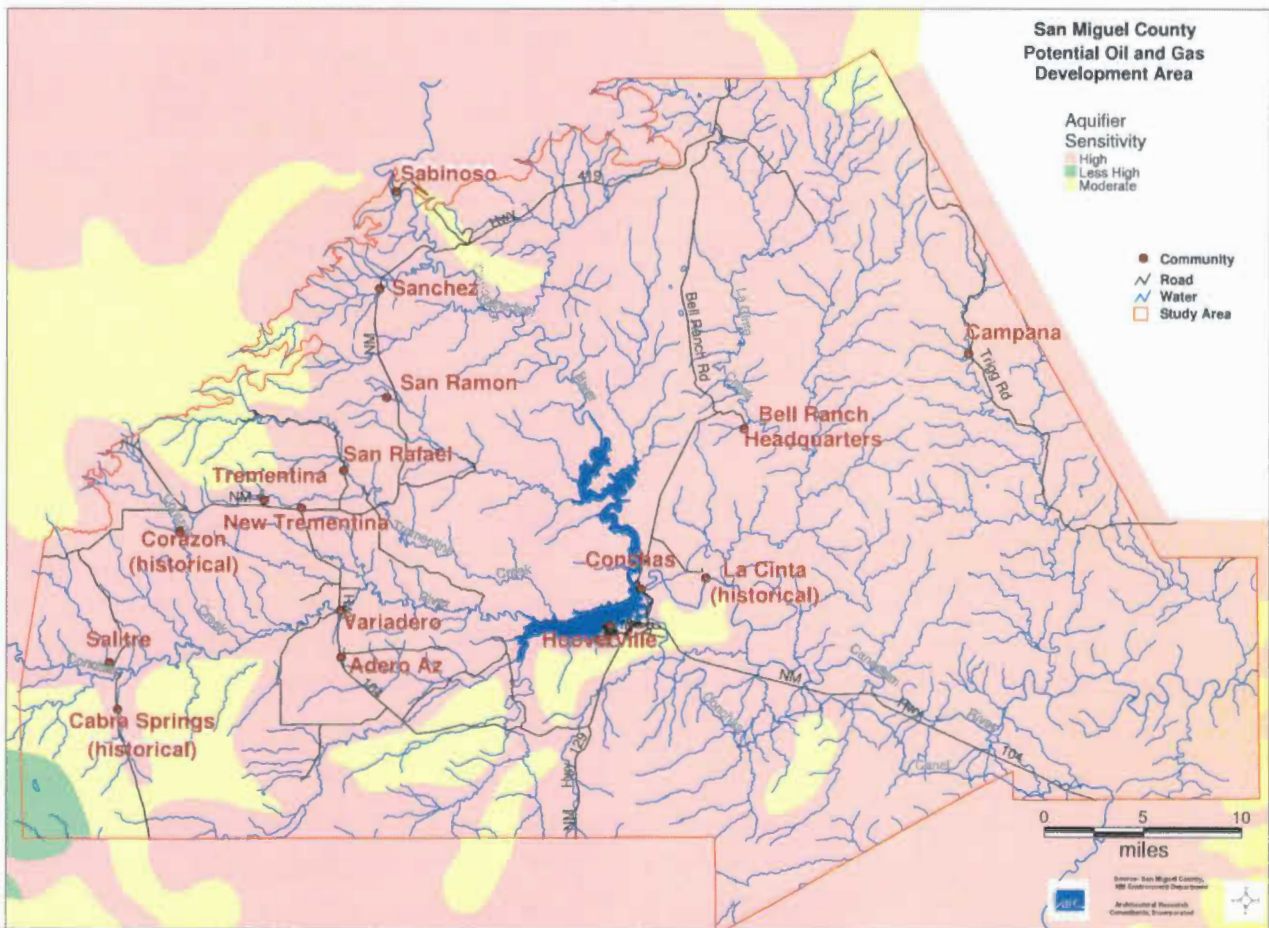


9 Griggs, R.L., and Hendrickson, G.E., 1951, "Geology and Ground-Water Resources of San Miguel County, New Mexico: New Mexico Bureau of Mines and Mineral Resources," *Groundwater Report 2*, 121 p.

6. Aquifer Sensitivity

Lee Wilson and Associates prepared aquifer sensitivity maps for the New Mexico Environment Department in 1989. Digital versions of the maps are available on the Internet as a data layer in the department's Liquid Waste Environmental Geographic Information System (GIS).¹⁰ The department is updating these maps and modifying them to include current depth-to-groundwater information, as well as areas of karst and fractured bedrock, known contamination sites, and gaining streams. The maps include color-coded groundwater areas based on depth to water and naturally occurring, background, total dissolved solids (TDS). They indicate that areas with groundwater less than 100 feet deep, and with 2,000 mg/L or less TDS are highly sensitive. The State is also mapping other areas of concern based on karst or fractured bedrock, known groundwater contamination, and gaining streams impacted by septic tank effluent.

The purpose for the mapping is to guide surface applications, such as septic tanks or, in the case of oil and gas production, design of closed loop systems and handling of any oil spill and other on-the-ground activities. This mapping is not a suitability indicator for all aspects of oil and gas operations, but rather should serve as a guide to necessary minimum depth of an oil and gas well (a depth greater than the groundwater table), and the need for proper casing and other means to protect against migration of oil and gas into the aquifer.

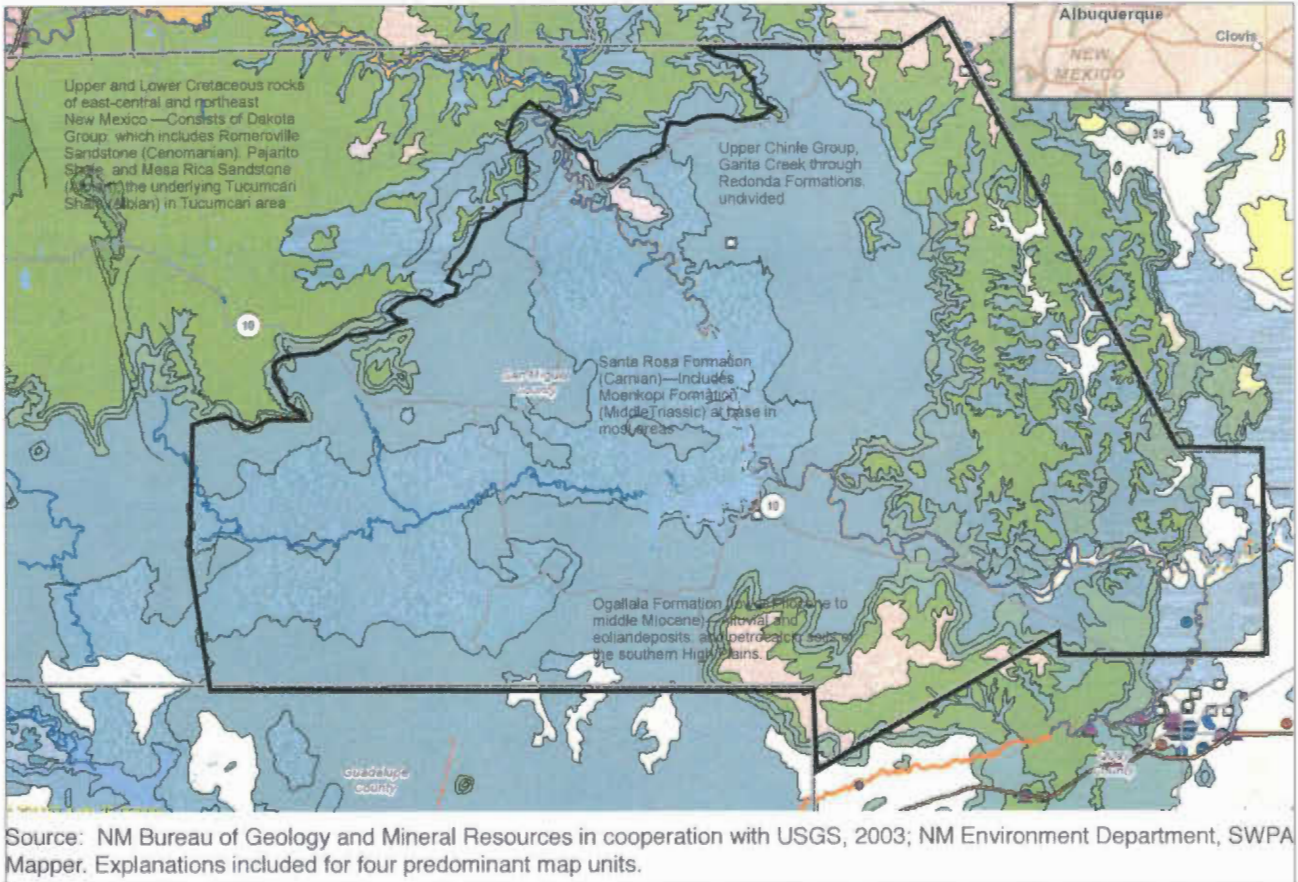


¹⁰ (<http://www.nmenv.state.nm.us/fod/LiquidWaste/eGISgateway.html>)

7. Geology

Aquifers have distinct properties within the different geological formations shown in the map below.

Geologic Map of New Mexico: Eastern San Miguel County Excerpt



8. Vegetative Coverage

Southern Shortgrass Prairie Ecoregion

Much of the topography is flat to rolling plains dissected by canyons and caprock. Expanses of shortgrass prairie, with blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*) historically dominated the ecoregion. Today, Chihuahuan desert grasslands are dominant over shortgrass prairie in arid areas towards the southwestern part of this ecoregion and shortgrass prairie is replaced by mixed-grass prairie to the east where greater moisture is available. The varied topography and geologic features in this ecoregion allow for a wide range of floral and faunal communities. Other important habitats in New Mexico's part of the Southern Shortgrass Prairie Ecoregion include juniper and piñon-juniper woodlands and sand shrublands. Changes in natural processes have led to shrub invasion of the prairie systems. Eastern cottonwood (*Populus deltoides*) typically dominate riparian woodlands; however, tamarisk (*Tamarix* sp.) and Russian olive (*Eleagnus angustifolia*) are significant non-native invaders. (The Nature Conservancy 2004)¹¹

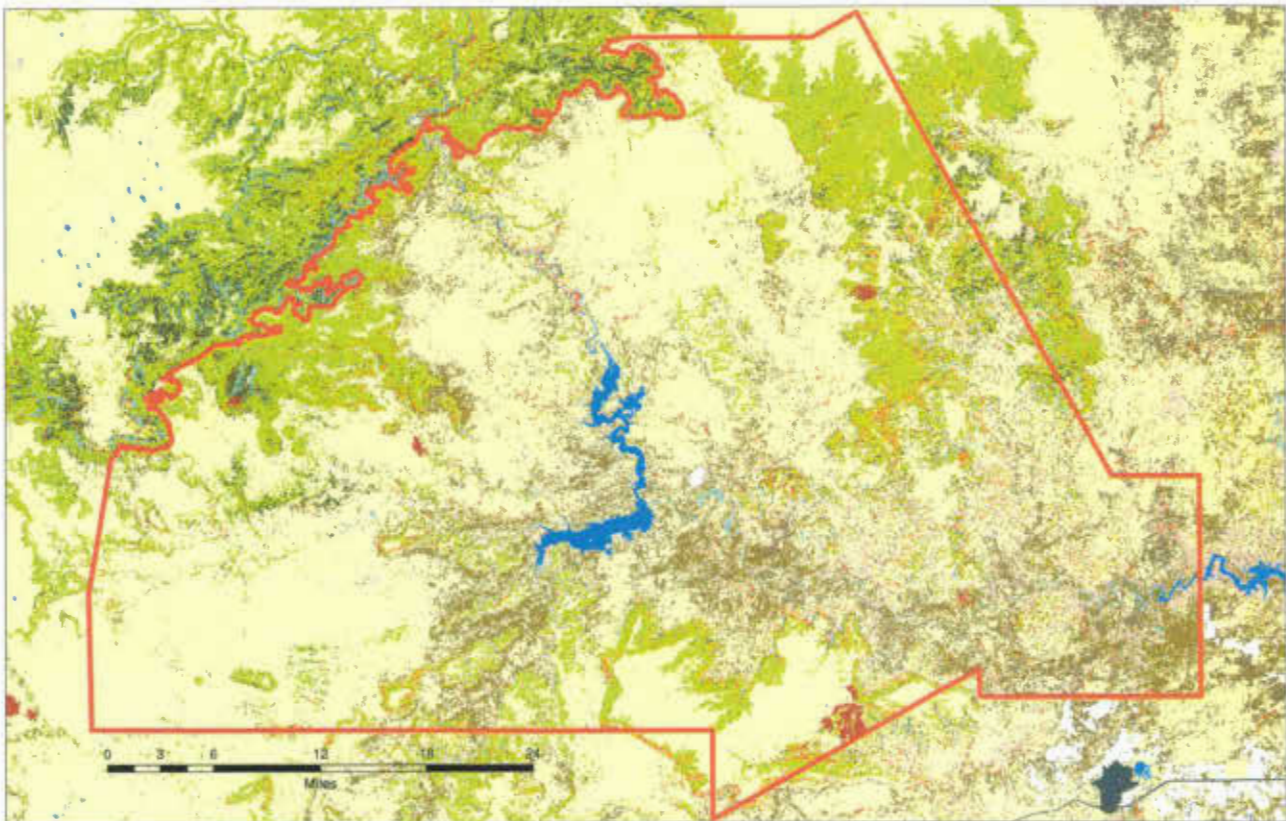
With very few roads, development activities and land disturbance in eastern San Miguel County and areas contiguous to the study area in other counties, the gamma grass prairie ecosystem constitutes an intact landscape. On a scale of 1 (critically impaired) to 5 (secure), the gamma grass prairie in eastern San Miguel County has a global conservation status ranking of G3, according to NatureServe. G3 means the vegetation is vulnerable, at moderate risk of extinction due to a restricted range, with relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.¹²

The riparian and wooded hillside areas in the area, particularly in proximity to the Canadian and Conchas Rivers, contribute to the biological diversity of the area.

11 *Comprehensive Wildlife Conservation Strategy*, 2006, pages 81 and 82

12 <http://www.natureserve.org/explorer/granks.htm>

Vegetative Coverage Map of Eastern San Miguel County



- Western Great Plains Shortgrass Prairie
- Southern Rocky Mountain Juniper Woodland and Savanna
- Open Water
- Agriculture/General
- Western Great Plains Cliff and Outcrop
- Western Great Plains Riparian
- Chihuahuan Cresotebrush Desert Scrub
- Inter-Mountain Basin Semi-Desert Shrub Steppe
- Rocky Mountain Gambel Oak-Mixed Montane Shrubland
- Recently Burned
- Southern Rocky Mountain Pinon-Juniper Woodland
- Western Great Plains Mesquite Woodland and Shrubland

9. Wildlife Habitat

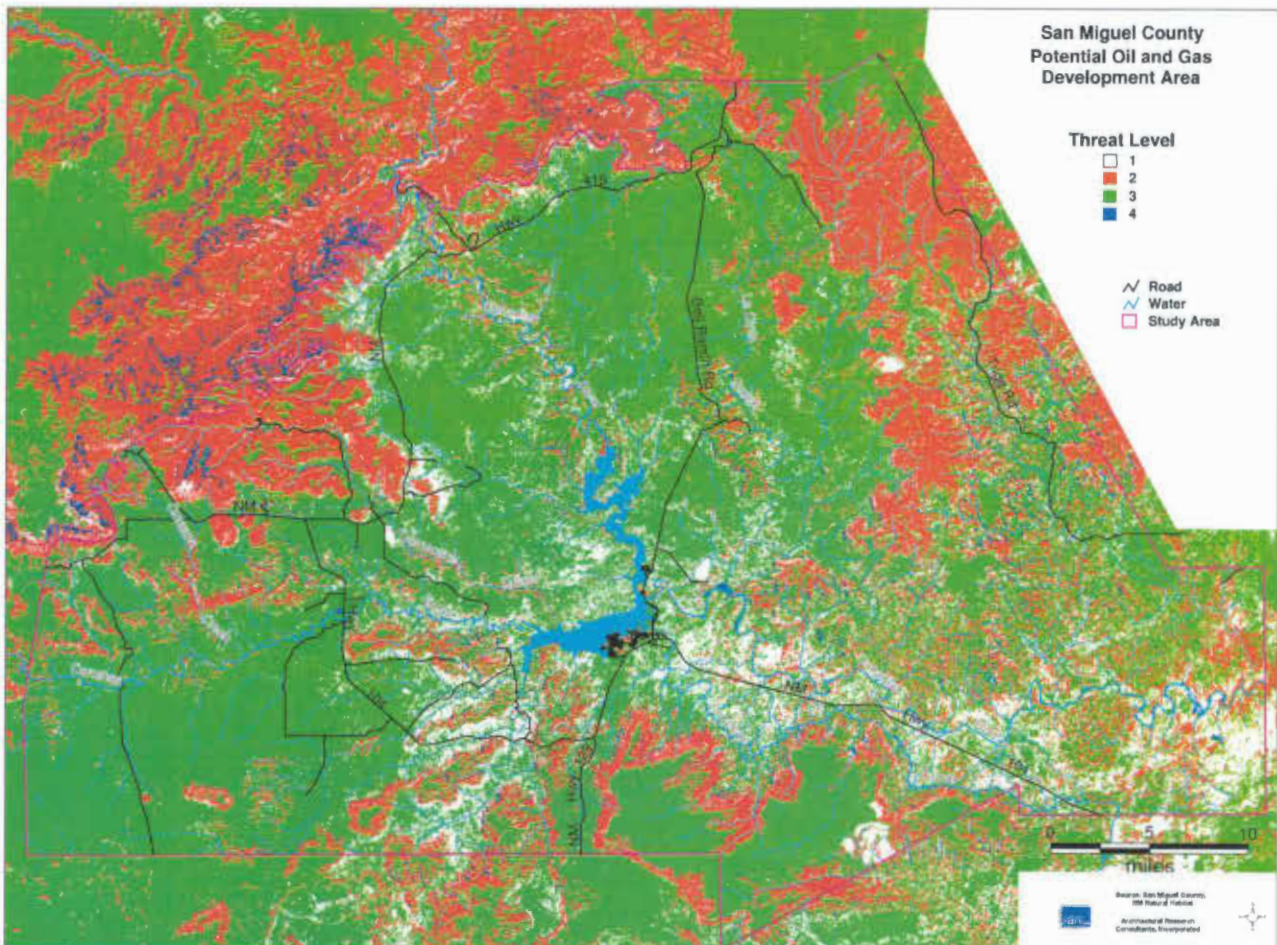
The Comprehensive Wildlife Conservation Strategy mapped habitat threat based on spatial scope and severity of factors for each habitat type and developed magnitude scores for species of greatest conservation need. On a scale of 1 to 4, higher cumulative magnitude scores indicate a greater degree of threat.

“Spatial scope” is the measurement of the area threatened, expressed in hectares or as a percentage of the total possible project area.

4= throughout (>50%) 2= scattered (5-15%)
3= widespread (15-50%) 1= localized (<5%)

“Severity” is the measurement of reduced target viability and integrity (e.g. nesting success, stream temperature).

4= serious damage or loss 2= moderate damage
3= significant damage 1= little or no damage¹³



13 Comprehensive Wildlife Conservation Strategy, 2006, pages 17 and 18 with GIS data provided by New Mexico Natural Heritage

Biota Information System of New Mexico (BISON-M), maintained by New Mexico Department of Game & Fish, lists 221 species in San Miguel County. This report does not identify those species' presence within the eastern portion of the county. Such species as pronghorn antelope generally thrive in this area and have considerable worth for their beauty and value to hunters.

10. Threatened and Endangered Species

The following species are located in San Miguel County. To protect sensitive information, the Natural Heritage New Mexico report available to the general public does not specifically identify the presence of these threatened and endangered species in the eastern portion of the county.

Exhibit 7
Threatened and Endangered Species in the County

Threatened and Endangered Species in San Miguel County

Common Name of Species	Federal	State
Chihuahua Chub	Listed Threatened	Endangered
Rio Grande Cutthroat Trout	Candidate for Listing	
American Peregrine Falcom		Threatened
Mexican Spotted Owl	Listed Threatened	
Southwest Willow Flycatcher	Listed Endangered	
Holy Ghost Ipomopsis	Listed Endangered	Endangered
Least Shrew		Threatened
Wood Lilly		Endangered

Source: Natural Heritage New Mexico Species Information

Map is unavailable.

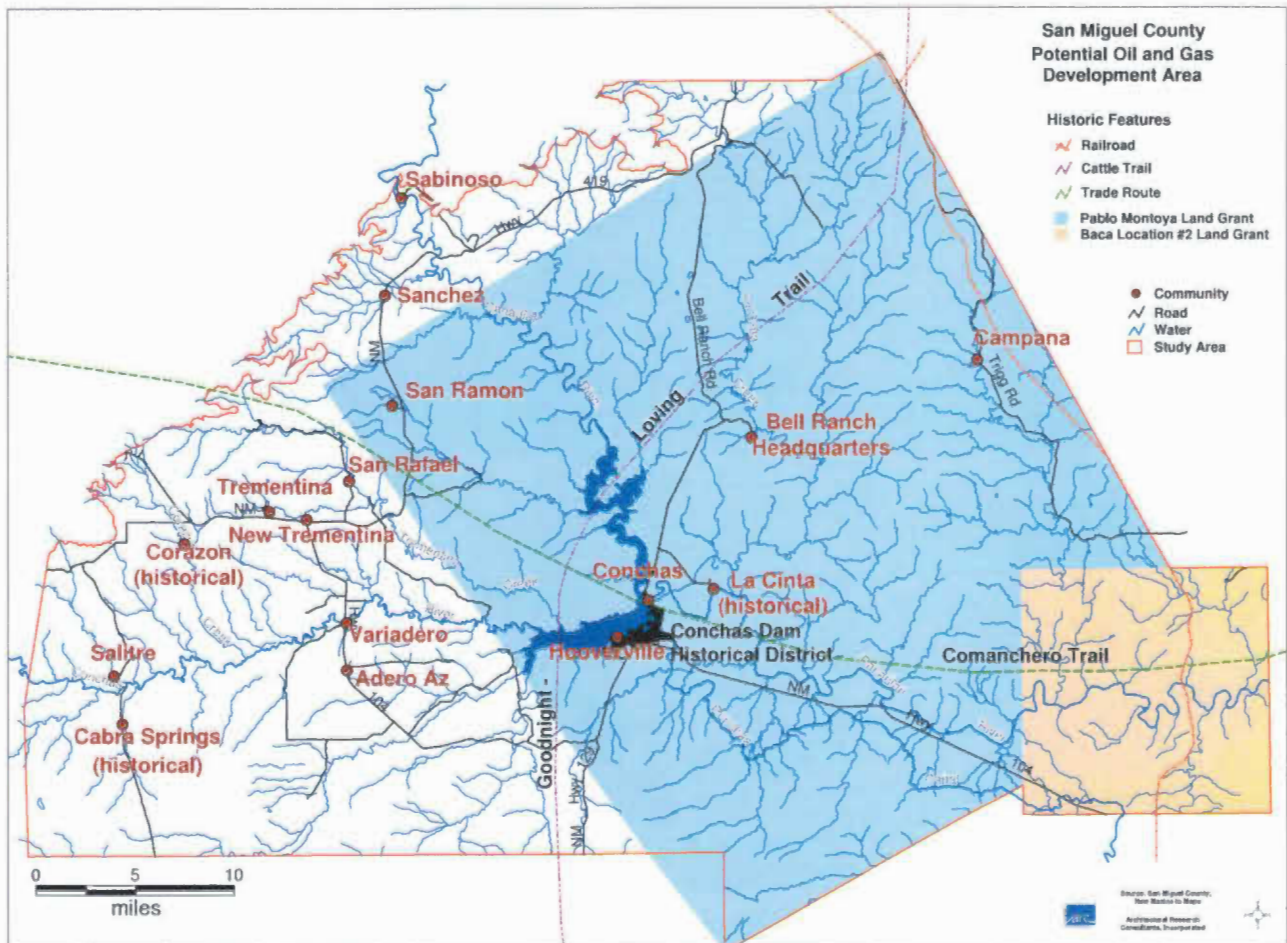
11. Historic Resources

Several sites in the county are on the New Mexico Register of Cultural Properties and the National Register of Historic Places:

- Bell Ranch Headquarters is on the state register
- Conchas Dam Historic District is on both the state and federal registers, while the actual dam site and an Indian petroglyph site known as “Conchas Lake Indian Writings” (#497) are listed on the state register
- Variadero Bridge is listed on both state and federal registers

Trementina, while not on the state or federal register, is a true ghost town. Founded after the Civil War, it survived until after World War II. Many buildings still stand, but are no longer habitable. Former residents hold reunions each Memorial Day.

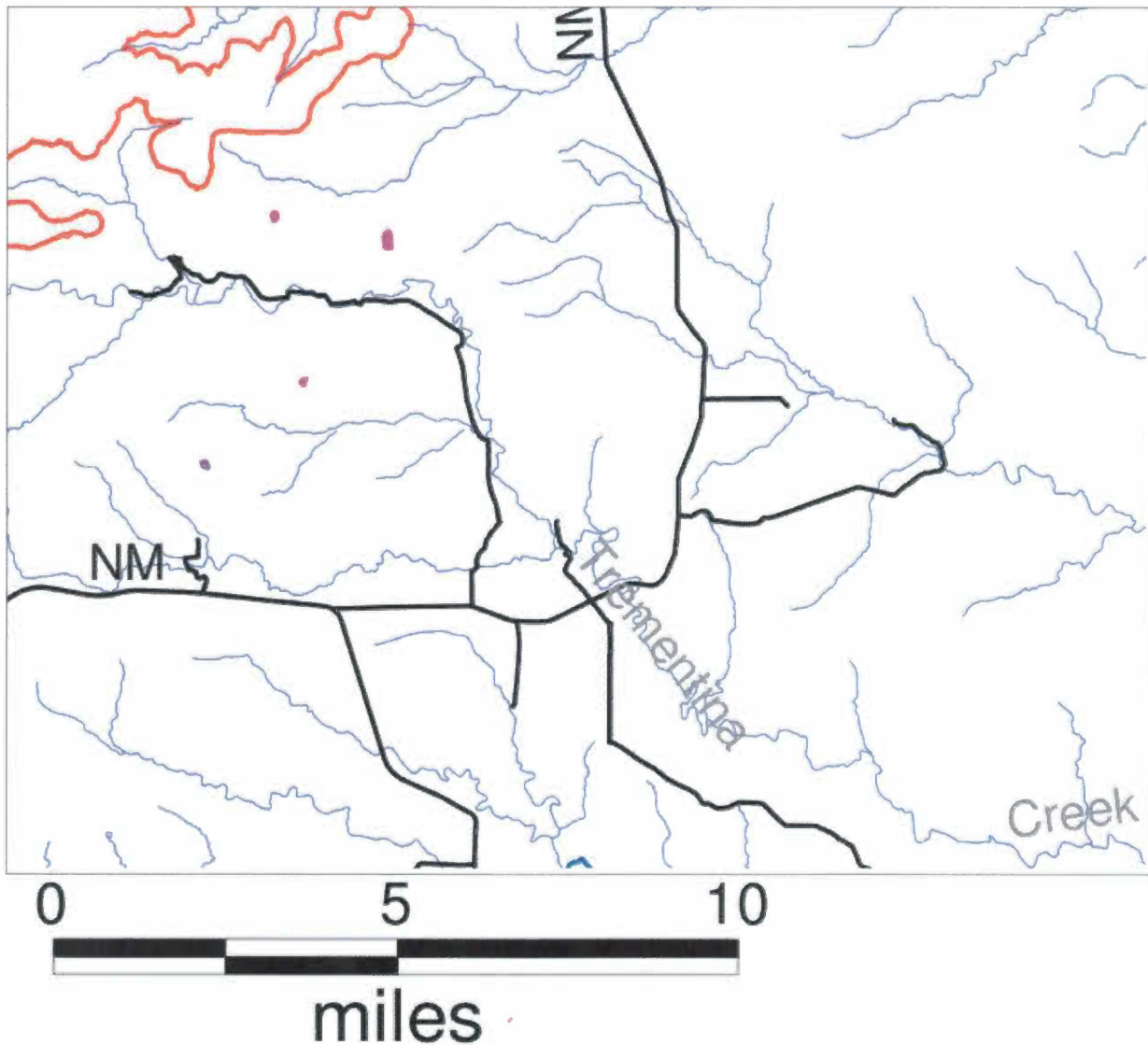
The following map shows other historic features that are of historic contextual interest. Structures or sites of historic interest or significance may be associated with those features.¹⁴ In addition, the State Historic Preservation Division keeps locations of various cultural and archeological sites in a large confidential database, to which only qualified archeologists have access.



14 (Sources: *New Mexico in Maps*, 1986 UNM Press by Jerry Williams; New Mexico Resource Geographic Information Systems (RGIS) for places; New Mexico Register of Cultural Properties; National Register of Historic Places; and <http://www.ghosttowns.com/states/nm/trementina>.)

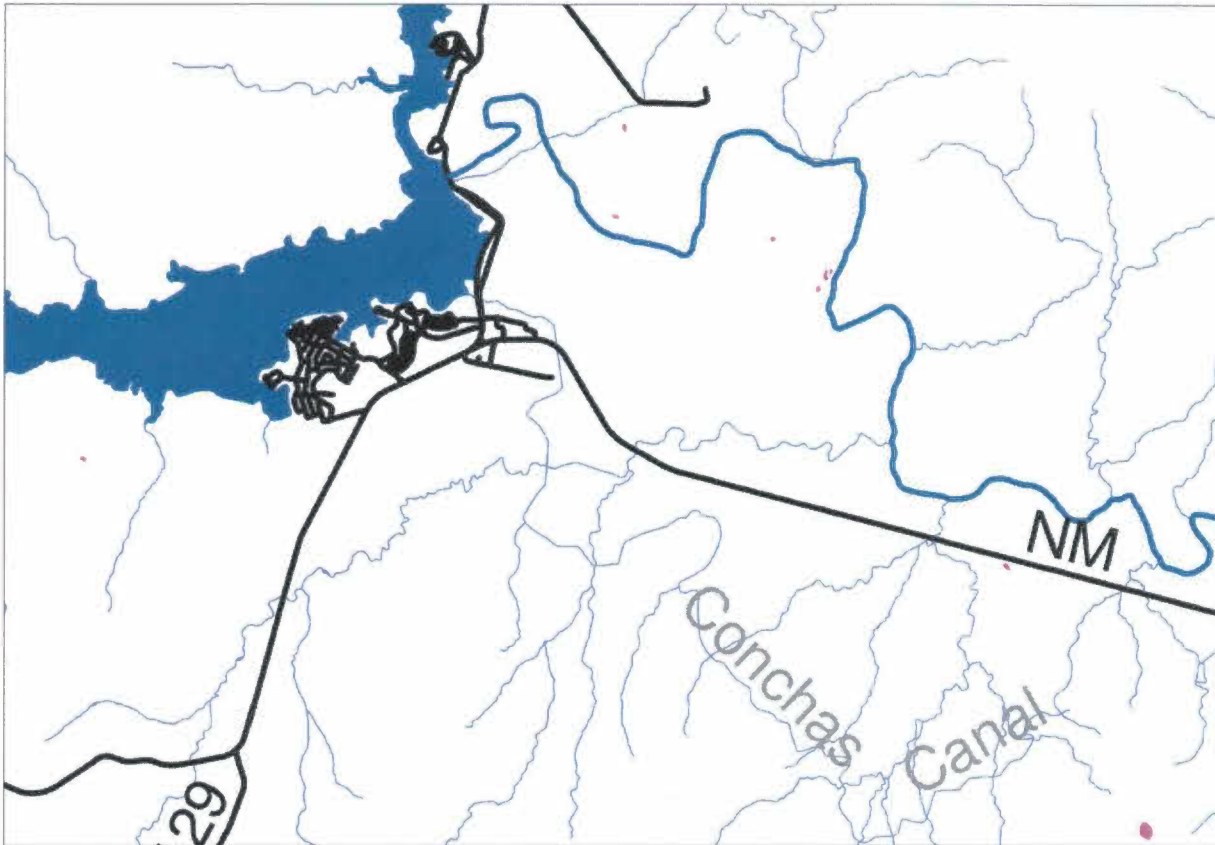
12. Natural Springs and Playas

The Playa Lakes Joint Venture has identified 19 probable playas in eastern San Miguel County. The playas vary in size from 0.07 to 30.1 acres and average 5.9 acres. They are clustered in the areas of Trementina Creek and Conchas Reservoir. The maps below for those two areas show playas as purple polygons. Playas in conjunction with native grasslands provide habitat for waterfowl, waterbirds, and many other migratory and resident birds. Of particular concern is the loss of playa wetlands critical to wildlife health and survival. They are also a primary source of recharge for aquifers.¹⁵ In addition, this area has man-made depressions or stock tanks that serve as ephemeral catchments for seasonal run-off waters. The following maps do not show these features.¹⁶



¹⁵ Playa Lakes Joint Venture (PLJV), a regional partnership of federal and state wildlife agencies, conservation groups and private industry dedicated to conserving bird habitat throughout the western Great Plains

¹⁶ *Comprehensive Wildlife Conservation Strategy*, 2006



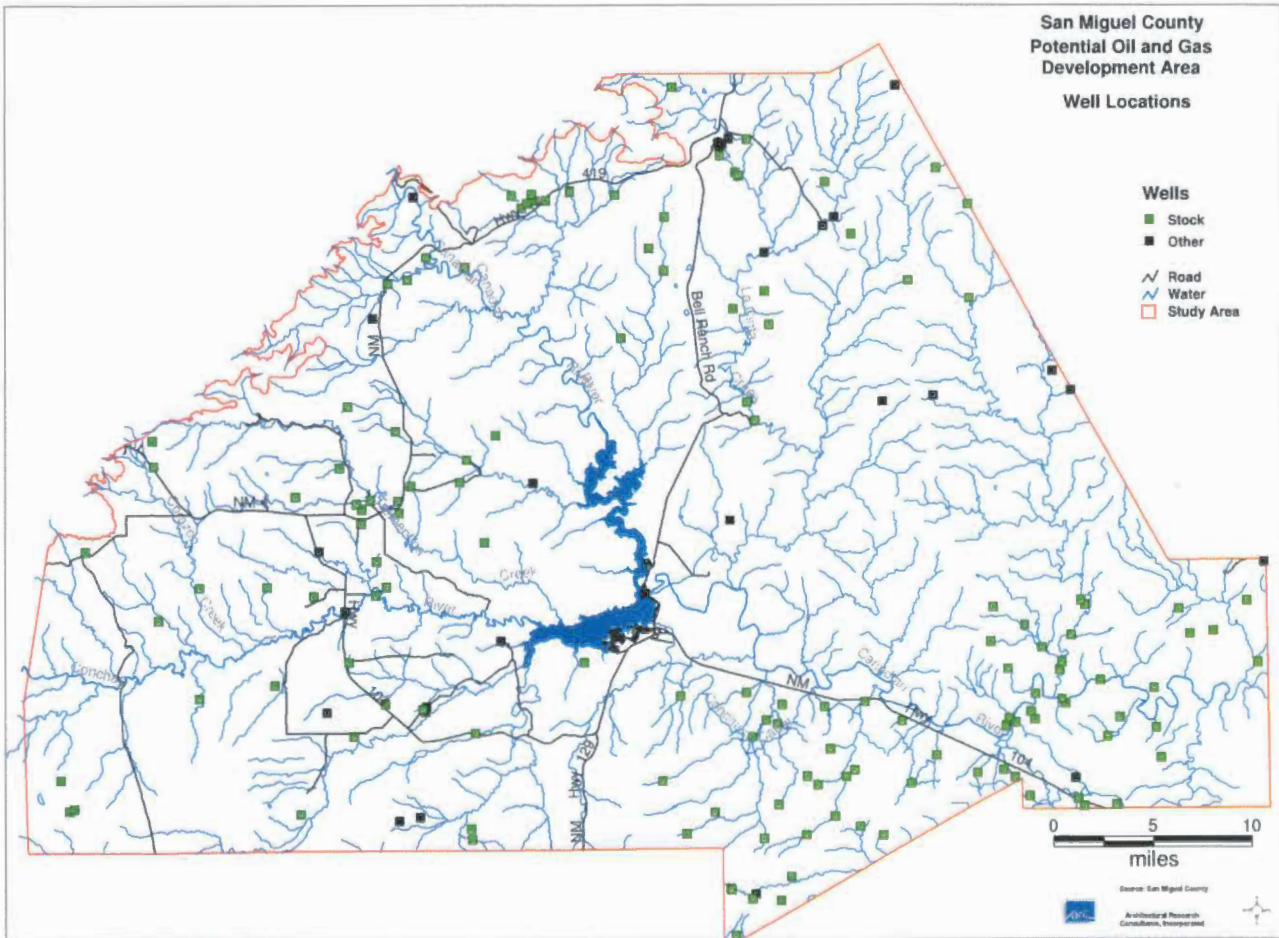
miles

The following map shows playas east of Bell Ranch Road:



13. Water Wells

Of the 176 water wells identified in eastern San Miguel County, 146 are for stock, and 30 are for "other" uses, including domestic and municipal systems.¹⁷

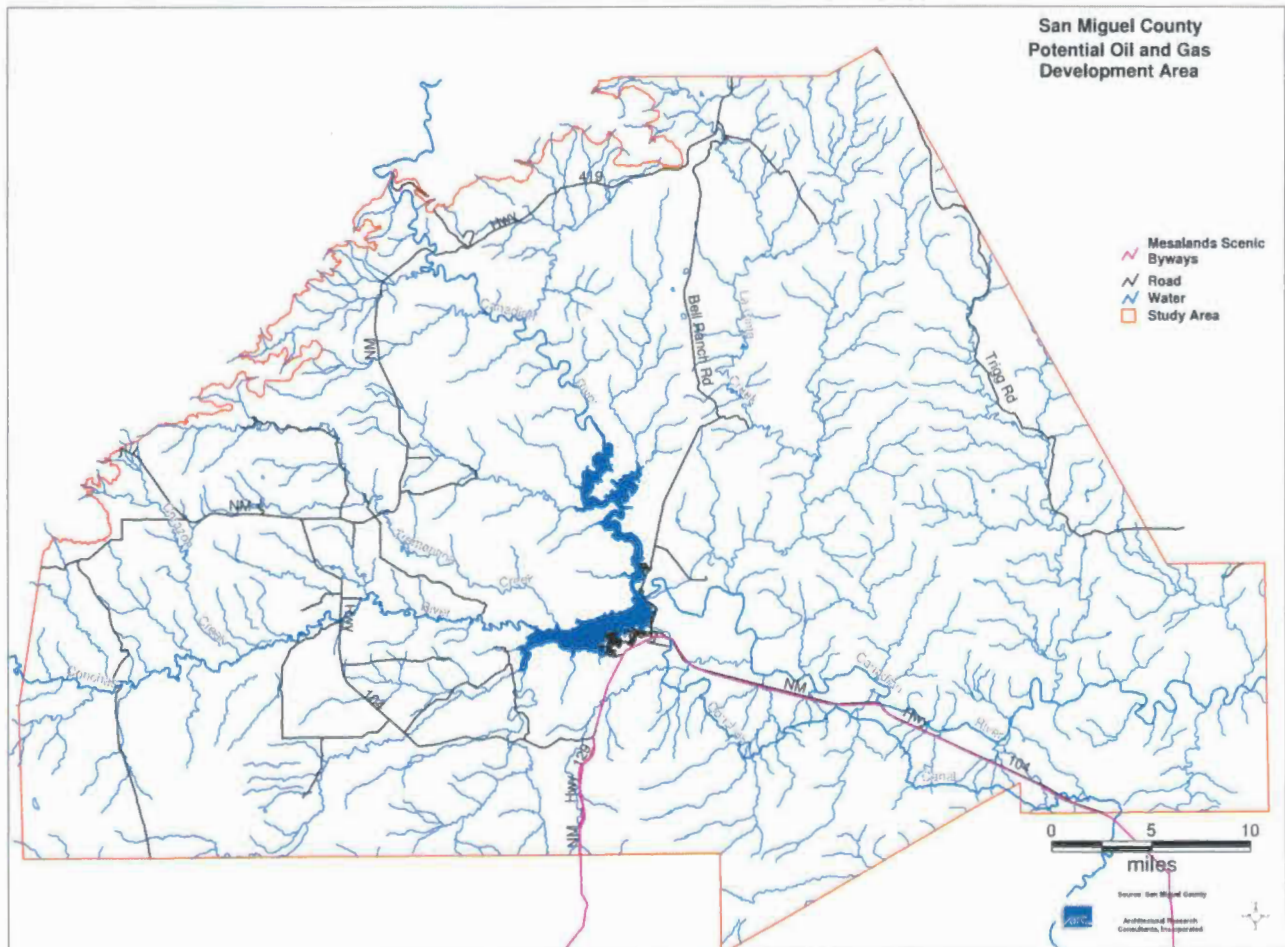


¹⁷ San Miguel County, database from the Office of State Engineer

14. Road and Scenic Byways

The major roads in eastern San Miguel County are New Mexico Highways 104, 129, and 419. The area also has several county roads. Bell Ranch Road is a private road with public access that links NM Highways 104/129 with NM 419.

Mesalands Scenic Byways consists of alternative loops of scenic and historic significance from Interstate 40 in Guadalupe and Quay Counties. One loop consists of NM Highway 104 from Tucumcari to Conchas Reservoir and NM Highway 129 from Conchas Reservoir to Newkirk.



15. Capital Projects and Fire Department Coverage Areas

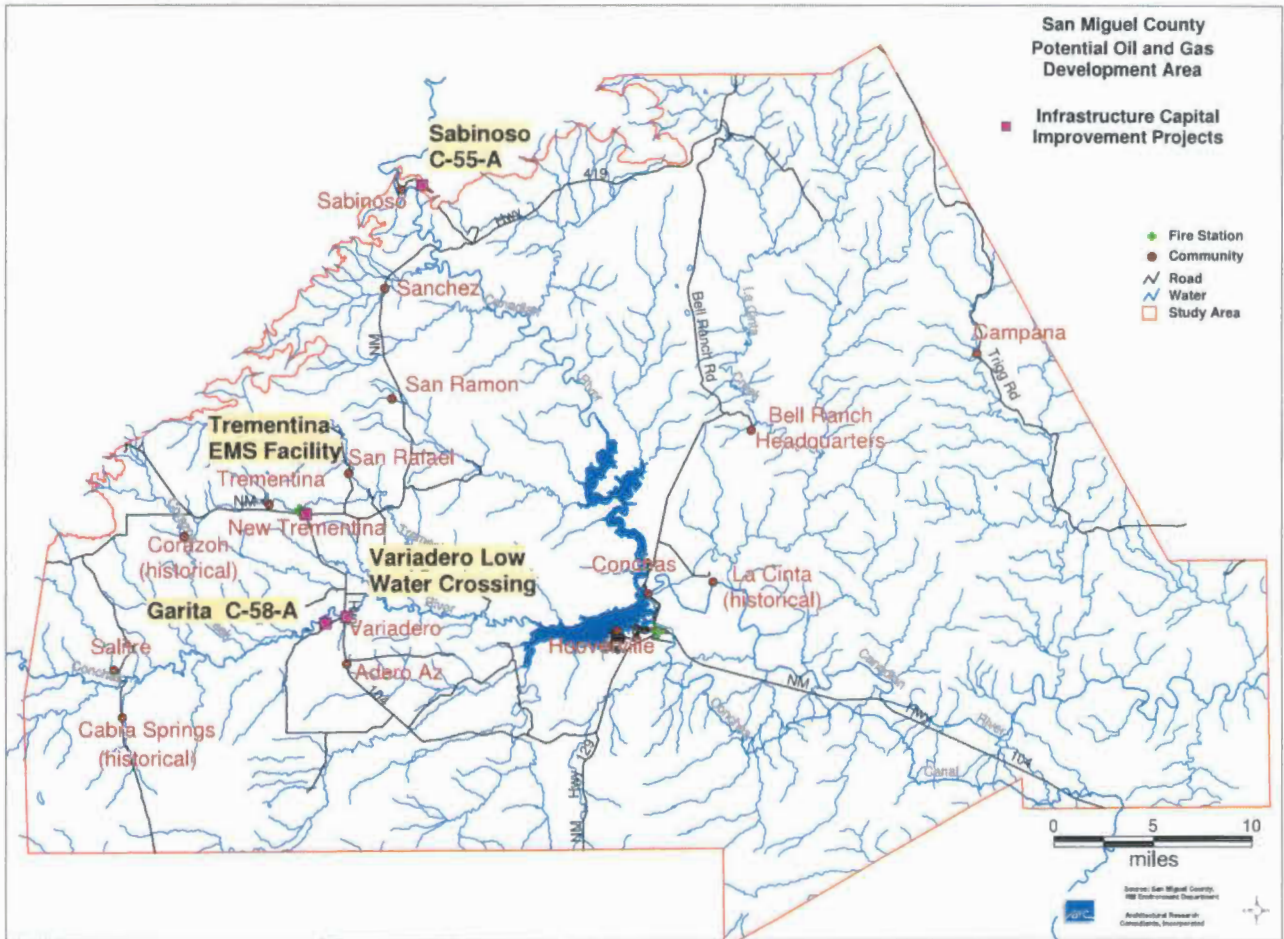
The San Miguel County Infrastructure Capital Project Improvements Plan 2014-2018 identifies several projects within the eastern San Miguel County area. In addition to these location-specific projects within the area in the following map, several countywide projects will provide higher levels of service in the area, including:

- Cattle guard replacement in various locations of the county
- Fire department protective equipment
- Fire department hazmat equipment
- Fire department rescue equipment
- Sheriff patrol units
- Fire department training facility
- Sheriff emergency technology response
- Sheriff department protective equipment
- Northeastern New Mexico preparedness center

The following map shows the two fire departments within the area, Conchas Dam and Trementina.

Emergency response public service needs include:

- Ambulance unit for Conchas Dam
- Conchas Fire Department expansion
- First responder communication tower
- Two water tender pump trucks
- Two class A pump trucks
- Water supply and storage
- First responder training

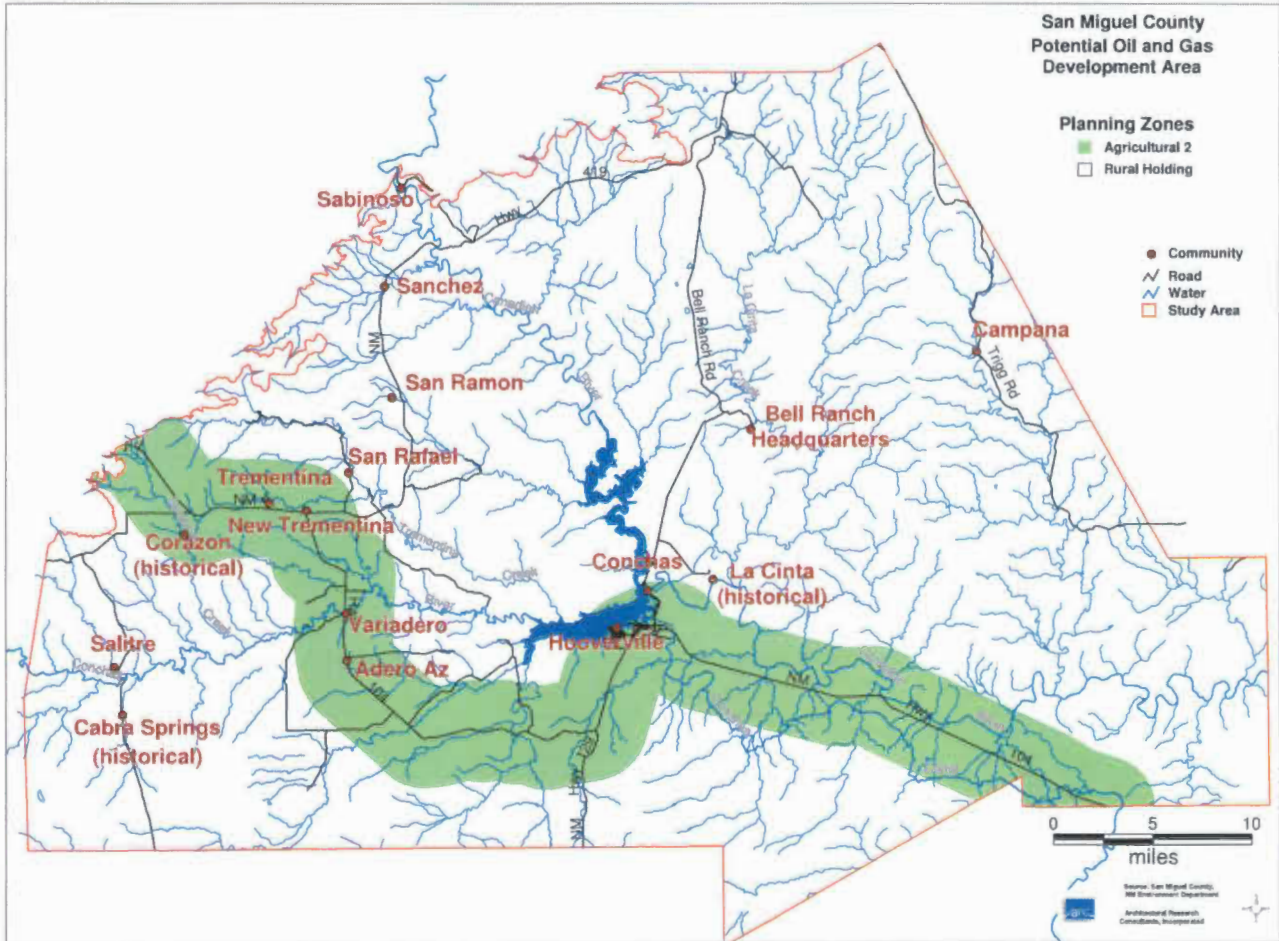


16. Current Zoning

Two zone districts encompass eastern San Miguel County:

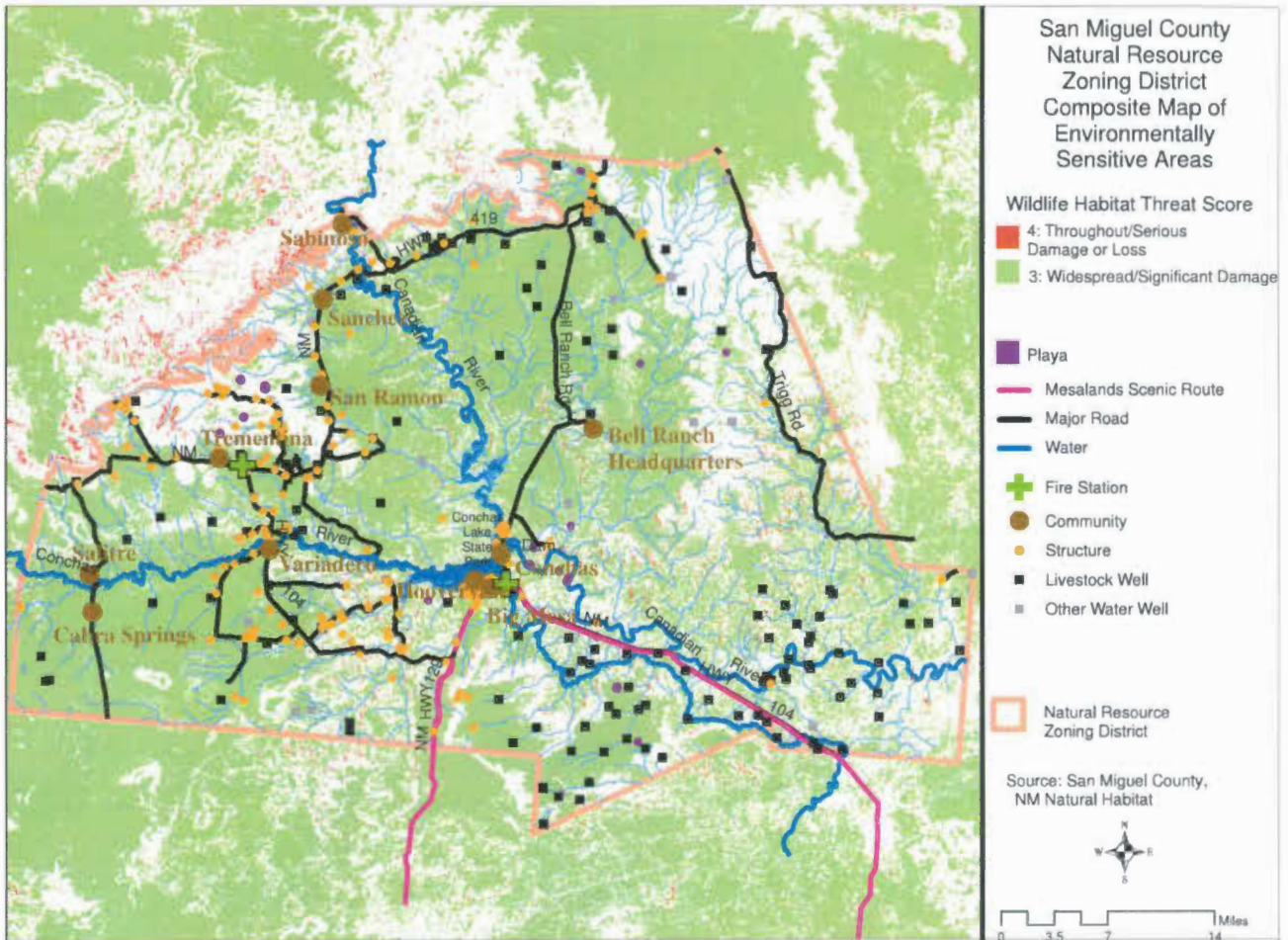
- Agricultural residential 2 (AR-2)
- Rural holding (RH)

The following map shows the zoning districts within the area.



17. Composite Map of Environmentally Sensitive Areas

The following map shows surface hydrology, wildlife habitat threat, playas, structures, scenic highway route, and water wells in eastern San Miguel County.

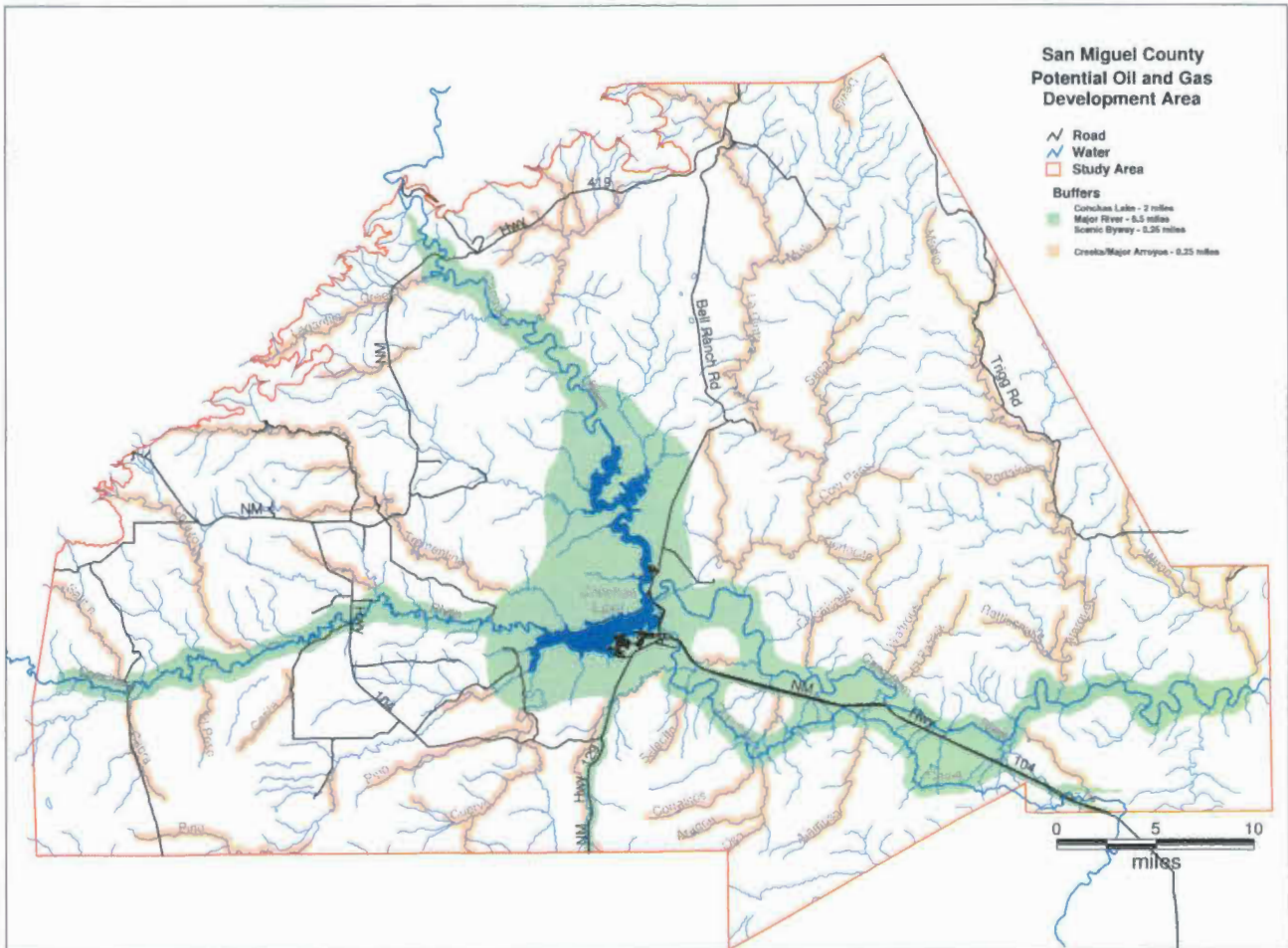


18. Setbacks for Conchas Lake, Rivers, Creeks, Major Arroyos and Scenic Highways

Section 2124.12 of the Oil and Gas Ordinance establishes setbacks for oil and gas facilities. The map below shows the setback distances for the following features:

- Conchas Lake: 2 miles
- Rivers, including Canadian River and Conchas River: 0.5 miles
- Creeks and major arroyos identified in the following map: 0.25 miles
- Scenic Byways: 0.25 miles.

Other feature setbacks are as specified in Section 2124.12 of the Oil and Gas Ordinance.



Findings from Mora-San Miguel-Guadalupe Regional Water Plan

Daniel B. Stephens & Associates, Inc. prepared the Mora-San Miguel-Guadalupe Regional Water Plan for Tierra y Montes Soil and Water Conservation District and the Mora-San Miguel-Guadalupe Regional Water Planning Steering Committee in 2005. This plan is among the 16 regional water plans developed as part of the regional water planning program, administered by the Interstate Stream Commission for the New Mexico Office of State Engineer.

Some of the key findings from the regional water plan relevant to oil and gas development in San Miguel County are:

- Surface water supplies more than 95% of the county's water demand, including domestic uses, agricultural irrigation and storage. Most of this water is used for reservoir evaporation and irrigation.
- Average rainfall is approximately 16" per year, but storage of surface water is very limited.
- 89% of the county's water depletion (excluding reservoir evaporation) is from acequia use.
- In the eastern portion of the county, the area where oil and gas drilling will be allowed, the majority of surface water is within the upper Canadian River and its tributary, the Conchas River.
- The Endangered Species Act can play a prominent role in river management, including the timing and release of flows.
- Removal of water for oil and gas drilling can result in major impacts to river flows, even upstream of designated habitats, and must have strict review and limitation.
- Surface water in the Mora- Canadian River Basin is fully appropriated.
- Under drought conditions, the Canadian River system provides insufficient supply in Conchas Reservoir to meet current demands for water use. During drought years 2002 and 2003, only 16% of average demands were filled in 2002, and no diversions occurred in 2003.
- The Canadian River Compact allows New Mexico the "free and unrestricted use of all waters" originating in the drainage basin of the Canadian River above and below the Conchas Dam. However, the amount of water that may be stored or impounded is limited to 200,000 acre-feet.
 - Water resources in the county are at risk, as oil and gas drilling may negatively diminish or pollute local water supplies and sources of surface and groundwater.
 - Canadian River Basin hydrology is important not only to the residents of San Miguel County, but to the interstate stream system through its contribution to the Arkansas River.
- The groundwater in the Canadian Basin is stream-connected, which means that any new groundwater development that affects the Canadian River shall be offset, so that surface water rights shall be purchased and retired in order to offset the effects of the proposed groundwater pumping.

C. Issues and Opportunities

Establishment of Boundary Within Which Oil and Gas Activities May Occur

The County arrived at the boundary for the Oil and Gas Overlay Zoning District through analyzing geographic characteristics of the overall county.

The county decided to exclude the western portion of San Miguel County from the area where oil and gas activities may occur, for the following reasons:

- The western portion of the county contains nearly all of the federally protected conservation land in the county, including the Santa Fe National Forest, Pecos Wilderness Area and Pecos National Monument.
- This area includes Interstate 25, Burlington Northern railroad line and the historic Santa Fe Trail.
- Traditional villages and communities and the major population center of the city of Las Vegas are located in the western portion of the county.
- Several of the scenic corridors identified in the San Miguel County Comprehensive Plan are in this area.
- Oil and gas drilling will unreasonably threaten the Rio Gallinas Watershed, which supplies 90% of the water supply for all of the higher density residential and nonresidential areas of the county, including but not limited to the city of Las Vegas and 100% of the water for the surrounding communities and downstream users of the Gallinas River in the area.
- Oil and gas drilling will unreasonably threaten the Rio Pecos Watershed.
- The western part of the county and the Gallinas Watershed contain unique and irreplaceable historic, cultural, archaeological resources, ecotourist sites and scenic vistas. The effects and impacts from the exploration, drilling, operation and transportation of oil and gas would threaten these assets.
- The western part of San Miguel County also contains complex hydrology and geology
- Fracking may produce minor earthquakes that could affect property and the lives of residents. The County wants to avoid this potential problem in its more populous area.

Exhibit 8
*Boundary of
Potential Oil and
Gas Development
Area*



The county also has significant concerns about potential impacts of oil and gas operations on sensitive lands, historic and scenic resources, wildlife, water resources, and residents and visitors in the eastern portion of the county. Nonetheless, the eastern portion of the county is sparsely populated, primarily ranch land, and contains fewer historical, archeological and cultural resources and ecotourism sites than the

western area. The general suitability and potential for successful mitigation of oil and gas operations in the eastern portion of the county are considered greater than in the west.

Issues, Concerns and Recommendations Expressed in Public Hearings on Proposed Ordinance and Plan Element

San Miguel County Board of County Commissioners conducted the following meetings and public hearings on the proposed San Miguel County Oil and Gas Ordinance:

- Public Hearing, January 12, 2012
- Public Hearing, May 8, 2012
- Public Hearing, June 12, 2012
- Public Hearing, October 11, 2012
- Public Hearing, October 15, 2012
- Public Hearing, January 10, 2013
- Public Hearing, February 22, 2013
- Public Hearing, December 10, 2013
- Public Hearing, March 7, 2014 with Planning and Zoning Commission
- Work Session, March 21, 2014 with Planning and Zoning Commission
- Special Meeting and Public Hearing, January 10, 2013
- Public Hearing, Conchas, April 2, 2014
- Public Hearing, Pecos, April 22, 2014
- Public Hearing, Las Vegas, June 28, 2014
- Special Meeting, September 5, 2014
- Public Hearing, November 3, 2014
- Regular Meeting, November 12, 2014

The Planning and Zoning Commission held a public hearing on the plan element and ordinance on October 3, 2014. In addition, members of the public spoke to the Board of County Commissioners during numerous public input intervals of regular Commission meetings. Public hearings on the oil and gas ordinance were well attended, and participants raised many concerns and issues. Following is an overview of considerations expressed at April-June, 2014 public hearings that are relevant to both the plan element and ordinance.

Health and Safety

- Oil and gas has a poor safety record
- People in the oil and gas industry have not provided information about what they intend to do in San Miguel County
- State regulations of industry contain health and safety standards
- Air quality concerns
- Risk of cluster quakes reported in other places

Water Supply

- How much water is required per well? For exploration? For drilling?
- Risks of water pollution to surface water
- Where will water come from?

- Effects of fracking on aquifers
- Concerns about chemicals used in fracking solutions which may enter groundwater through failing wellbore pipes or leaching into groundwater from ponds
- Can drilling activities that use a lot of water be suspended during a drought?

Pollution, Contamination and Drought

- Underground and surface supplies of water
- Fracking waste-holding ponds
- Air monitoring: regulations are weak
- Release of methane gas, a greenhouse gas, into the air
- Negatives of drought conditions may be exacerbated by oil and gas production

Social and Economic

- Social impacts: lack of available housing and infrastructure, industry brings crime and drugs
- Look at impacts of cost of living increases
- Oil and gas jobs for locals will not be good-paying ones
- Positive effects on economy: Oil and gas industry supports the economy, brings new businesses, jobs, funding of government, especially schools through severance tax and royalties. Hobbs reaps \$6 million per month.
- Oil and gas jobs offer good wages and could bring family members back to San Miguel County who leave because the economy is so weak
- Positive effect on property holders: If landowners can lease property for drilling, might give them the funds to improve their property
 - If the ordinance passes, it will discourage any oil and gas development
- In some places, property values have significantly declined after fracking begins, and some insurance companies have cancelled insurance policies

Needs for More Facilities/Support Services

- Road and traffic impact issues
- Ensure availability of emergency personnel

Site Development

- Need to pay attention to siting: roads, large pads, electric lines, chain-link fencing — consider visual impacts
- Need larger setbacks between drilling and surface water sources

Issues with Ordinance that Concern Land Owners/Others Who don't Support the Ordinance

- Impinges on property rights
- Drilling strengthens U.S. against Russia
- State should regulate, not the County
- Development is good with restrictions by landowners
- County needs to do its part and allow oil and gas extraction
- Cannot eliminate risks, can only reduce
- Patents on homestead land are subject to vested and accrued water rights
- Infractions of the ordinance should result in not only fines, but expulsion from

operations in the county

Issues with Ordinance that Concern Oil and Gas Industry

- Fees are very high
- American Petroleum Institute stated that one million wells have been fracked safely
- If the ordinance passes, O&G will stay away. People will leave because there are no jobs.
- The ordinance will be complicated to implement, with a lot of red tape
- The ordinance is flawed
- The ordinance will discourage private investment

Boundary Selected

- What is the justification for the boundary location?

Issues with Permitting and Monitoring

- Industry must pay development and impact costs
- Any effects from fracking would be kept from public, since lease agreement is between landowners and industry
- Post-abandonment monitoring must continue
- Sites no longer in use for oil and gas operations should be reclaimed.
- Ensure that highly qualified experts review applications and conduct monitoring

Alternative Economic Opportunities

- Look at alternative energy sources
- Identify new opportunities to strengthen the economy

Authority and General Intention for San Miguel County Regulation of Oil and Gas In Addition to State and Federal Regulations

Local governments are empowered through zoning enabling statutes to regulate land use activities that threaten health, safety and welfare. These regulations rely upon zoning power, police power, planning, environmental, health, safety, public nuisance and land use legislative regulations. The county intends to regulate the effects and impacts of oil and gas exploration, drilling, extraction and transportation. The regulations apply also to compressor stations, pipelines and other off-site oil and gas facilities.

Oil and gas drilling and associated activities have a countywide impact with the potential for far-reaching effects on the community, including but not limited to major demands on public facilities, a major impact on the county's capital improvement planning and budgeting, and the potential to affect the environment, the public health, safety, and welfare beyond impacts on immediately neighboring properties.

Regulation of oil and gas drilling and associated activities is necessary to protect the health, safety and welfare of the citizens, residents and businesses of San Miguel County, as well as to preserve the quality and sustainability of life, the economy, infrastructure, environment, natural resources and natural landscapes of the

county, consistent with the comprehensive plan, any area or community plan, and the ICIP.

The oil and gas ordinance regulations are designed to:

- Establish separate land uses
- Preserve and protect environmentally sensitive lands, including but not limited to: wildlife habitats, wetlands, hillsides, arroyos, acequias, floodplains, and cultural, historical, and archaeological resources
- Avoid water and air pollution
- Assure water availability, and air and water quality
- Achieve County fiscal balance
- Provide adequate public facilities and services
- Provide affordable employee housing
- Reduce traffic congestion
- Eliminate health and safety risks
- Assure adequate fire, police and other emergency service and preparedness
- Meet toxic chemical pollution standards

The County shall adopt oil and gas drilling regulations consistent with and supplementary to state and federal statutes and regulations. County regulations address the use of that part of the surface estate that is occupied or utilized by owners or lessees of subsurface oil and gas interests so as to further protect surface owners' rights and privileges under the Surface Owner's Protection Act, NMSA 1978 §§ 70-12-1 through 70-12-12 (2007), and to protect and promote the health, safety and general welfare of present and future residents, businesses, communities, environmental and natural resources of the county.

Potential Public Nuisances

The County finds that oil and gas projects may create public nuisances, including but not limited to chemical and toxic material pollution, excessive noise levels, traffic congestion and hazards, excessive lighting, glare, odors, fire hazards, explosions, visual impacts, impacts or pollution of the air, surface water and groundwater pollution; impacts on environmentally sensitive lands, inadequate stormwater and solid waste disposal and treatment, danger to birds and other species, and pollution of floodways and floodplains. The occurrence of adverse public nuisance, environmental and land use effects and impacts may result from the drilling, fracking, production, transportation and abandonment of oil and gas activities within the county.

The County has complementary authority, supplemental to the authority of the State, to regulate adverse public nuisance, environmental and land use impacts and effects consistent with state and federal legislation and regulation, stemming from oil and gas projects in the county, and finds that the state has not expressly or impliedly preempted or occupied the field of oil and gas regulation. An environmental impact report shall be prepared and submitted to the County for all discretionary development approvals for oil and gas projects.

Integrated Environmental Analysis Using Land and Environmental Suitability Assessment

Given the size, design and operational characteristics of oil and gas facilities, the County finds it is necessary to demonstrate that oil and gas facilities are compatible with adjoining land uses and environmentally sensitive lands. Factors that should be considered include such issues as impacts to property values, air and water quality, public safety, scenic vistas, cultural, historical and archaeological resources, and fire protection.

The County finds that a Land and Environmental Suitability Assessment must be prepared and submitted to the County for all discretionary development applications for oil and gas projects.

Water quality

Pollution from oil and gas wells can mix with floodwaters carrying agricultural pesticides, sewage, gasoline from service stations, and other contaminants resulting in greater pollution. No drilling shall be allowed in any floodway or floodplain designated as such in any Flood Insurance Study (FIS) or shown on the Federal Emergency Management Agency (FEMA) maps.

Recent studies establish that 2% to 10% of wells are leaking upon completion or will leak over time, potentially releasing injected or naturally occurring pollutants into water sources.

Need for Setbacks from Important Environmentally Sensitive Lands

The County finds that some of the most intensive oil and gas development in the nation is in regions where water is already at a premium. Prolonged drought conditions in many parts of Colorado, New Mexico and Texas have created increased competition and conflict between farmers, communities and energy developers, which is only likely to continue. Even in wetter regions of the northeast United States, dozens of water permits granted to operators had to be withdrawn last summer due to low levels in environmentally vulnerable headwater streams. Due to the dire conditions of the current drought, the New Mexico Department of Game and Fish recommendations for enacting setbacks of .5 miles for oil and gas wells from significant environmentally sensitive areas. The County hereby finds that the Department of Game and Fish recommendations shall be supplemented in the County to require 1.5 miles setback from important underground aquifers, and surface aquatic, acequia and riparian habitats such as floodplains, springs, wetlands and drainages including, but not limited to, the Canadian River Basin.

Water Availability

The County finds that a water availability assessment and geo-hydrologic report shall be conducted for all discretionary development approvals for oil and gas projects. Such water availability assessment shall include an evaluation of water supply for the estimated life of the project, an assessment of available water supplies to determine if they can meet the demand associated with the project, identification of suppliers and an assessment identifying existing water rights,

entitlements or contracts and the quantities of water received in prior years, and an assessment of the project's impact on water supplies to other users. If water supplies are insufficient, a plan identifying alternatives shall be included. If groundwater is included in the project, additional information is required. Finally, anticipated changes in the project that will substantially increase water demand shall be indicated. The geo-hydrologic report shall assess all geo-hydrologic information pertinent to the project area.

Oil and gas operations-related depletions of ground water, without reuse treatment and return plants, will further deplete the ground water supply. The County should require all structures and buildings associated with oil and gas operations to add rainwater capture systems and cisterns which will be amortized by reductions in water use and subsequent fees through a County public water improvement district.

Natural Habitat

The County finds that eastern part of the county has very important wildlife habitat in its waterways, associated riparian environments and grasslands. Threatened habitat should be protected from damage from oil and gas operations.

Air Quality

The County is concerned about the release of methane and other gases, chemicals used in the oil and gas operations that become airborne, and dust from travel on gravel and dirt roads.

Lighting, Visual Impacts and Flaring of Gas

As lighting and flaring of gas may have visual impacts, the Board of County Commissioners finds that all oil or gas facilities shall comply with the oil and gas ordinance and the Night Sky Protection Act, NMSA 1978, Sections 74-12-1 et seq. (1999)(as amended) at all times, except as provided for in the ordinance. All lighting shall be limited to the minimum required to meet security and safety standards consistent with the practices of a reasonable and prudent operator.

Noise

All construction, maintenance and operations of any oil or gas facility shall be conducted to minimize the noise created to the greatest extent possible and, therefore, noise requirements shall be established.

Impacts on Historic Communities and Cultural Resources

As described under the Existing Conditions section of this plan element, eastern San Miguel County contains several sites on the national historic register. Additional unlisted historic settlements may have artifacts associated with them. Oil and gas operations should identify both Indian and Hispanic cultural sites and artifacts, and identify avoidance and mitigation measures through the permitting process to assure that operations do not harm or eliminate these resources.

Impacts on Scenic Highways

Oil and gas operations can negatively impact the visual quality of the landscape viewed by travelers on scenic highways in eastern San Miguel County.

Adequate Public Facilities and Services

Planning and land use regulations should assure that adequate public facilities and services are available to address the impact and effect of oil and gas projects by ensuring that such impacts as affordable employee housing, roads, fire, police, emergency response, storm water drainage, and water treatment, reuse and retention will be available for the duration of oil and gas projects without impacting the financial capacity of the county. The County finds that an adequate public facilities and services assessment that determines improvements needed and construction commitment must be prepared and submitted to the county as part of an application process.

Fiscal Impacts on the County

The County must determine the effect and impact upon County revenue and costs necessitated by additional public facility and service costs generated by proposed oil and gas projects, and the fiscal implications of oil and gas drilling in the County. The County finds that a fiscal impact assessment shall be prepared and submitted to the County for all discretionary development approvals for oil and gas projects. The applicant must pay costs of engaging expert consultants to review applications; conduct land and environmental suitability analyses and other studies, assessments and reports to advise and provide recommendations to the Planning Commission, Board of County Commissioners, and Zoning Administrator; and to frequently monitor operations.

Financial Assurances

The County finds that applicants seeking approval for an oil or gas facility in San Miguel County shall provide financial assurances acceptable to the County as provided in the ordinance.

Impact Fees and Public Improvement Districts

New oil and gas development may require the construction of new infrastructure to address the needs of such items as public facilities, emergency response, and fire and police protection resulting from the impact of oil and gas development. The Board finds that impact fees and public improvement districts shall be established as needed, requiring oil and gas projects to pay for such infrastructure needs generated by new oil and gas development.

Fracking and Acidizing Practices

The County finds that fracking and acidizing of any well shall be performed in strict compliance with applicable New Mexico Oil Conservation Division (OCD) rules and the best industry and management practices. Fracturing pressures shall be controlled to limit the extent to which fractures escape the zone being fractured. Fracking operations may be monitored by the oil and gas inspector to ensure compliance with these standards.

Abandonment, Plugging and Site Remediation

The County finds it necessary to assure that the required reclamation of oil and gas drilling areas that are disturbed by excavation activities, is sufficient to provide for short- and long-term development meeting all environmental, infrastructure, health, safety, and aesthetic needs of the county and of surrounding properties and neighborhoods. Upon the abandonment of a well or oil or gas facility, the operator shall comply with County, OCD, Water Quality Control Commission, or federal agency regulations and all requirements of the ordinance in connection with abandonment, plugging and remediation of all oil and gas facilities. Annual monitoring and as-needed remediation should continue after abandonment for a period of time established in the CUP permit.

Monitoring of Gas and Oil Well Operations

The County must monitor oil and gas operations to assure compliance with the conditions of their permits. The County will work with operators to establish standards and assign personnel through County or contractual staffing to regularly monitor and evaluate the impacts of oil and gas operations. Oil and gas operators will need to pay or reimburse the county for costs associated with oil and gas inspections.

Oil and Gas Conditional Use Permit Submittal Requirements

- Site plan
- Environmental impact report
- Adequate public facilities and services assessment
- Water availability report
- Traffic impact assessment
- Geo-hydrologic report
- Emergency response and preparedness plan
- Fiscal impact assessment
- Land and environmental suitability assessment

D. Goals and Policies

1. **Ensure that natural and cultural resources are protected from the adverse effects and impacts of oil and gas development.**
 - A. Create a process of discretionary development approval for oil and gas projects that requires extensive environmental, fiscal, traffic, adequate public facilities, water availability, geo-hydrological protection and emergency service and response reports, plans, assessments and studies.
 - B. As part of the development review process, the County shall find that a proposed oil and gas project:
 - i. Does not threaten the health, safety, or welfare of the county, its residents, or its environment
 - ii. Does not impair or preclude the purposes of planning, including but not limited to environmentally sustainable land use, cultural, historic and archaeological resource preservation and adequate public facilities and services

- iii. Does not create or increase any adverse public nuisance effects and impacts due to the exploration, drilling, operation, transportation, and abandonment of oil and gas activities within the county
 - iv. Does not threaten or negatively impact eastern San Miguel County's unique and fragile ecosystem, the preservation of which is of significant value to the citizens of the county and state
 - v. Does not threaten or negatively impact eastern San Miguel County's unique and irreplaceable archaeological, cultural, water and other natural resources.
- C. Use the Comprehensive Plan's Oil and Gas Element to guide land use and development decisions for oil and gas projects.
 - D. Use the land and environmental suitability assessment to lessen the density of oil and gas wells and pads through collocation of wells, per square mile, and to support sufficient setbacks from nearby uses and resources as may vary based on the particular use or resource.
 - E. Consider the cumulative impacts of incremental oil and gas project approvals rather than the impact of each individual project one at a time .
 - F. Maintain compatible transitions between different land uses and housing types through effective land use and site design regulations.
 - G. Ensure that oil and gas projects abutting residential development are compatible with the scale, intensity and overall character of the neighborhood.
 - H. Ensure that oil and gas development projects are compatible with existing development patterns.
 - I. Require new development to incorporate consistent design features that preserve community image.
 - J. Promote the use of good site design and layout, architectural design and building materials that incorporate regional, indigenous and historical design and materials.
 - K. Ensure that oil and gas projects are compatible with the unique, rural character of the community in which it is located.
 - L. Limit and minimize negative impacts and public nuisances from oil and gas projects through the planning and development review process.
 - M. Direct the location, mix and density/intensity of oil and gas projects so that the surface footprint is minimized and open land is preserved.
- 2. Support, protect and enhance the rural agricultural and ranching economies from deleterious effects and impacts of oil and gas projects**
- A. Protect land used for agricultural or ranching uses from excessive and incompatible development of the surface by oil and gas projects.
 - B. Limit impacts to existing agricultural and ranching operations from on- and off-site oil and gas development.
 - C. Protect livestock through implementation of best management practices for

oil and gas development.

3. Support and protect the county's tourism industry and scenic qualities enjoyed by residents and visitors from the adverse and public nuisance effects of oil and gas projects

- A. Protect natural, cultural and community assets that contribute to the county's appeal as a tourist destination.
- B. Protect ecotourism assets through open land protection.
- C. Preserve and protect scenic viewsheds as an important resource for economic development and quality of life from adverse effects and impacts of oil and gas projects
- D. Limit development on steep slopes with a grade equal to or greater than 10%, on visible ridges and on peaks of hills.
- E. Limit the need for cut and fill through sensitive siting and design.
- F. Limit development near prominent natural features such as distinctive rock and land forms, vegetative patterns, river crossings or other landmarks.
- G. Encourage the screening and buffering of drill sites, and oil and gas facilities with landscaping that includes native vegetation and use of materials that reflect natural, regional design elements.
- H. Limit outdoor lighting and prevent light pollution.

4. Preserve, protect and enhance the county's natural environment and resources from adverse effects, impacts and public nuisances due to oil and gas projects

- A. Encourage sustainable development, and "green" construction and operating techniques for oil and gas development, including, but not limited to, the following:
 - i. Consider the cumulative impact of all actions
 - ii. Create the least impact possible on a site
 - iii. Construct facilities, to the extent feasible, using existing infrastructure
 - iv. Recycle all waste products
 - v. Minimize emissions through the use of "green" technology
 - vi. Use best management practices
 - vii. Use alternatives to gas generators, such as solar or wind
 - viii. Use recycled materials
 - ix. Develop a sustainability plan (analyze current practices for ways to reduce waste, and reuse and recycle equipment, facilities and materials)
- B. Limit incompatible oil and gas projects in sensitive environmental areas and near natural resources.
- C. Encourage oil and gas projects to collocate and cluster wells in areas away from natural and environmental resources to minimize impacts and protect open space.

- D. Support an integrated framework for protection of natural resources that includes the use of environmental impact reports and impact assessments to assess existing conditions, identify fiscal impacts, minimize and mitigate potential damage to the environment and monitor change.
- 5. Preserve and protect the quality and quantity of surface and groundwater resources from oil and gas projects**
- A. Promote water conservation in oil and gas projects.
 - B. Prevent groundwater contamination.
 - C. Protect aquifer recharge areas.
 - D. Prohibit oil and gas projects near surface resources, including all perennial or intermittent water bodies, including, but not limited to rivers, streams, creeks, arroyos, ponds, playas, wetlands, drainage ditches and other riparian areas.
 - E. Prevent water pollution through use of best management practices, including use of vegetative buffers.
 - F. Ensure that all oil and gas exploration and production methods minimize potential impacts to the underlying hydrogeologic structure and surface water.
 - G. Require oil and gas operations to minimize and mitigate potential impacts to all surface water resources and groundwater recharge areas.
 - H. Require adequate setbacks from water-related areas when conducting potentially harmful operations such as cleaning and storage.
 - I. Promote operator development of a storm water management plan and an analysis of water quality non-point source impacts (identifying potential impacts of oil and gas development and proposing mitigation techniques).
 - J. Prohibit operations from causing significant degradation in water quality or pressure of any public or private wells.
 - K. Limit development near domestic water wells.
 - L. Prevent use of dangerous and/or toxic chemicals near surface or groundwater resources.
 - M. Ensure that disposal of produced water and other wastes is in accordance with local, state and federal regulations.
 - N. Monitor surface and subsurface water resources to promptly detect any quality degradation or quantity diminution.
- 6. Protect vegetation, including rare and native species, from the impacts of oil and gas projects**
- A. Require a vegetation analysis, prior to development, that identifies existing vegetation, anticipated impacts from the development and proposed mitigation.
 - B. Require best practices for stormwater management, drainage and erosion

control.

- C. Prevent the spread of noxious and invasive species.
 - D. Prevent erosion and associated impacts to surface water, such as sedimentation and turbidity.
 - E. Limit impacts to vegetation through proper siting of equipment, restricting vehicular movement to roadways and other measures.
 - F. Encourage landscaping with native species.
 - G. Require use of vegetative buffers to prevent erosion and water pollution.
 - H. Require use of native species in site reclamation.
 - I. Encourage harvesting and replanting of native vegetation removed from development sites, either on or off site.
 - J. Limit the “scraping” of development sites and protect existing vegetation.
- 7. Protect wildlife, including threatened and endangered species, from the impacts of oil and gas projects**
- A. Preserve and protect wildlife habitat and migration corridors.
 - B. Preserve and protect riparian areas and surface water resources that support wildlife health.
 - C. Ensure facilities, roads, fencing and lighting are sited to minimize the impact and disturbance on wildlife habitat and corridors.
 - D. Prohibit operations from causing significant degradation of wildlife or sensitive wildlife habitat, especially to wildlife listed as threatened or endangered on the state or federal lists.
 - E. Require use of best management practice to prevent harm to wildlife.
 - F. Protect and preserve endangered or threatened species.
 - G. Enhance the database of known wildlife and habitat resources by compiling information that becomes available through the oil and gas development review process on a countywide basis.
- 8. Encourage oil and gas well siting and design that has the least impact on surface land uses and resources**
- A. Encourage placement of the well site, facilities, equipment and roadways to minimize long-term disruption of surface resources and existing uses.
 - B. Require use of directional drilling and multiple wells drilled on existing drill sites to reduce surface impacts.
 - C. Encourage the colocation of multiple wells on a single drill site.
 - D. Encourage design of the well site to fit the landscape and minimize construction needs, even if it requires a nonrectangular shape.
 - E. Promote use of equipment and facilities of appropriate size and scope, and of minimum size needed to access the resource.

- F. Limit placement of equipment and facilities on steep hillsides and watercourses with a grade equal to or greater than 10%.
 - G. Require revegetation of drill sites as part of reclamation.
- 9. Promote, encourage and ensure the use of best management practices and least-impact methods of oil and gas extraction**
- A. Limit use of any toxic substances at oil and gas development sites. Require the use of water-based, chemically inert, environmentally benign fluids for all oil and gas operations.
 - B. Ensure known carcinogens, endocrine disruptors, diesel fuel, and other petroleum products and chemicals are not released into the environment through water, air, soil or other delivery methods.
- 10. Ensure the prevention of any adverse public nuisance effects and impacts due to oil and gas development**
- A. Prevent violations of EPA, state or federal air or water quality standards due to oil and gas development.
 - B. Protect the public and natural environment from noise, odors, dust and other nuisances due to oil and gas development and related construction and shipping/trucking.
 - C. Limit noise, with emphasis on operations near residential, commercial or public uses.
 - D. Require the utilization of electric pump motors
 - E. Require use of quiet-design mufflers.
 - F. Promote use of remote well monitoring to reduce truck traffic, related noise impacts, emissions and impact on the environment.
 - G. Require equipment to be anchored to isolation pads to minimize vibration.
 - H. Limit fugitive dust.
 - I. Require all exhaust from oil and gas operations to be vented away from existing buildings or platted lots.
 - J. Require operations to meet all EPA, state and federal air quality standards.
 - K. Ensure all motorized equipment is equipped with catalytic converters and lean burn technology to reduce air quality impacts.
 - L. Limit outdoor lighting and ensure minimum use of it.
 - M. Require lighting to be downward directed or shielded to prevent direct reflection on adjacent property and protect the visibility of the night sky.
 - N. Limit hours of active operation.
 - O. Monitor oil and gas facilities to promptly detect any air quality degradation.

11. Protect life and property through wildfire prevention and response

- A. Require an assessment of wildfire hazards and development of plans to mitigate any hazards identified.
- B. Require exploration and production sites to be kept free of flammable materials, dry weeds, grass or rubbish.
- C. Prohibit fires near facilities or equipment.
- D. Limit on-site welding to prevent fires.
- E. Ensure proper storage of all flammable or explosive solids or gases.
- F. Require operators to notify the fire department and County Manager in the event of any oil or gas spills, leaks, explosions, fires or other hazards.

12. Require the safe handling and disposal of wastes related to oil and gas development

- A. Require development of a waste minimization and management plan, detailing reuse and recycling methods for all variations of waste produced by oil and gas operations, including exploration and production waste.
- B. Ensure adequate disposal and containment of all human waste through provision of on-site sanitary facilities for employees.
- C. Prohibit on-site burning of debris, vegetation, trash or other waste.
- D. Prohibit use of open on-site pools and produced water and other waste basins.
- E. Require closed-loop (“pitless”) drilling systems and closed containment of stored fluids.
- F. Limit outdoor storage of construction debris or other waste.
- G. Require proper storage, handling, transportation, treatment, recycling and disposal of all exploration and production waste.
- H. Prohibit use of reinjection wells for any produced water or other liquid.
- I. Require reuse of wastes and used water related to oil and gas development.
- J. Require all waste disposal to take place at a waste disposal facility approved by the County through an oil and gas conditional use permit.

13. Ensure reclamation of oil and gas development sites to pre-construction or better condition

- A. Require ongoing reclamation of disturbed areas not needed for active support of production operations.
- B. Ensure adequate maintenance of disturbed topsoil and vegetation, including reuse through proper salvage and re-spreading or planting.
- C. Require recontouring of the land to predisturbance conditions, or alternately, required reuse of land for parks, open space, recreation uses,

and water reuse treatment facilities.

- D. Require disturbed areas be re-seeded with native grasses or other vegetation similar in kind to surrounding vegetation, including access roads.
- E. Ensure proper establishment of newly reclaimed vegetation, assuring its survival through methods such as watering, fencing protection, use of vigorous self-sustaining vegetation and a final inspection process before well abandonment is finalized.
- F. Require removal of all concrete pads and equipment as part of reclamation.
- G. Require financial guarantees of adequate well closure and site reclamation as part of the development review process.
- H. Require long-term post-abandonment monitoring.

14. Ensure safe, adequate and appropriate housing for oil and gas workers

- A. Support the provision of safe and adequate housing through cooperation between the County and the oil and gas industry.
- B. Require affordable housing plans for oil and gas workers as part of the application for an oil and gas project.
- C. Ensure that temporary housing meets minimum standards and does not unduly impact the environment or surrounding land uses.
- D. Ensure that temporary housing meets minimum sanitation standards.
- E. Encourage communities to be walkable and mixed use.

15. Protect and enhance the County's fiscal resources and ensure high quality public facilities and services

- A. Require oil and gas projects to provide all public facilities and public services including fire, police, stormwater management, roads, and emergency response facilities needed by or because of the project.
- B. Require that oil and gas projects fund the efficient provision of public facilities and services.
- C. Assure that the provision of facilities and services does not impose the costs of such facilities and services on existing residents and businesses.
- D. Coordinate with other service providers on the timing and location of installation or replacement of utilities.
- E. Coordinate oil and gas decisions with the ability of the County and other service providers to adequately meet service demands concurrently with the creation of those demands by oil and gas projects.
- F. Ensure that adequate public facilities are available or funded prior to approval of oil and gas projects. Coordinate the implementation of this policy with the adoption of a capital improvements program that addresses existing deficiencies and future capacity needs.

- G. Maintain adequate road capacity, operation and maintenance, law enforcement, fire protection and emergency medical response times at adopted levels of service for all oil and gas projects within the county.
- H. New oil and gas projects shall fund the proportional share of costs for capital facilities for on- and off-site capital improvements required to serve new development.
- I. Encourage oil and gas operations to use existing infrastructure and facilities, such as roads, pipeline routes and drill sites, to reduce costs and minimize impacts to the environment.
- J. Use improvement districts in oil and gas areas to assess oil and gas projects with the cost of road, fire, police, emergency response and stormwater detention.

16. Ensure provision and maintenance of a safe and convenient roadway system.

- A. Require provision of road improvements, including construction and funding of improvements by oil and gas projects, to prevent severe traffic congestion.
- B. Require provision of an interconnected system of local roads, collectors, and arterials with sufficient capacity to meet the capacity and safety needs generated by oil and gas projects.
- C. Identify rights-of-way needed for future road construction and expansion through the adoption of an official map.
- D. Encourage design standards for roadways that reflect and enhance local community character.
- E. Minimize noise, light and visual impact of roadways and traffic.
- F. Protect important highway corridors from incompatible oil and gas projects.
- G. Designate truck and tanker transportation routes through the county.
- H. Require all new access roads to oil and gas projects to provide safe access, with features including adequate turnouts, emergency braking lanes and appropriate public signage.
- I. Require that the quality of all new roadways support safe passage by heavily laden oil and gas trucks, tankers, and equipment.
- J. Ensure new roadways create the least impact to areas, resources, and residents adjacent to oil and gas project sites.
- K. Ensure that roadways are improved and maintained to standards that allow road users to interact safely and allow adequate emergency response.
- L. Require use of a traffic impact analysis (TIA) in the process for development review of oil and gas projects.

17. Ensure public health, safety and welfare, and the provision of adequate law enforcement, fire protection and emergency medical services

- A. Limit opportunities for vandalism through requirements for gating, fencing and screening of oil and gas development sites.
- B. Enhance law enforcement and emergency prevention through on- and off-site monitoring of oil and gas development sites.
- C. Ensure provision of appropriate traffic control and security during heavy activity stages of oil and gas development.
- D. Require limits of all chemical, mineral, or toxic substances stored or used at oil and gas development sites to reasonable quantities of only those on a list of approved substances established by the County.
- E. Support opportunities for emergency response training in cooperation with the oil and gas industry.
- F. Encourage input from public health, law enforcement, fire protection and emergency medical service (EMS) response providers during the development review process.
- G. Support provision of established levels of service for law enforcement, fire protection and EMS.
- H. Encourage industry support for the County to acquire equipment, vehicles and training necessary to provide services to oil and gas development.
- I. Support outreach programs that focus on community education and notification about oil and gas development activities.

18. Ensure the protection of life and property through emergency prevention and response

- A. Support development of a County emergency response planning committee to include all County first responders and representatives of the oil and gas industry.
- B. Support development and maintenance of a countywide hazard mitigation and emergency response plan that addresses threats from oil and gas development as well as other natural and manmade hazards.
- C. Require operator development of emergency preparedness plans, providing a 24-hour contact and detailed fire prevention, response and safety plans for all entities involved.
- D. Ensure that the Fire Department, Sheriff and other first responders, including medical personnel at County hospitals comment on oil and gas development plans as part of the development review process.
- E. Ensure safe storage of chemicals and petroleum products at oil and gas development sites.
- F. Require disclosure of all chemicals used or stored on-site to ensure compatibility with the County's approved list of chemicals and require adequate product hazard labels.
- G. Require adequate signage to inform workers, emergency personnel and/or

trespassers of on-site dangers.

- H. Require financial assurances covering emergency response and environmental remediation from all oil and gas operators to ensure the protection of the public health, environment, wildlife and water.
- I. Promote the use of the best safety practices generally accepted by the oil and gas industry to minimize danger to the general public.

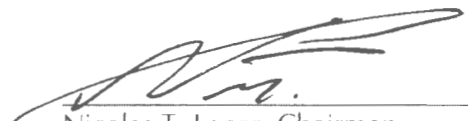
19. Ensure consistency between adopted plans and the oil and gas ordinance

- A. Assure that the oil and gas ordinance is consistent with the San Miguel County Comprehensive Plan, including but not limited to the Oil and Gas Element.
 - i. Evaluate conditional use applications and all submittal materials for their compliance with the goals and policies of the Oil and Gas Element.
 - ii. Evaluate any amendments to the oil and gas ordinance for their support of the goals and policies of the comprehensive plan.
- B. Review all neighborhood, community or area plans for guidance in the discretionary review process of permitting oil and gas operations.
- C. Review the Regional Water Plan for guidance in the discretionary review process of permitting oil and gas operations.
- D. Adhere to State of New Mexico plans, regulations and statutes.


20. Ensure that a review process of oil and gas discretionary permit applications and development of plans and ordinance amendments related to oil and gas are fair and fully allow public engagement

- A. Define a fair and equitable development review process that provides significant opportunities for applicant, public agency, service provider and public input.
- B. Engage community residents and property owners in the development and implementation of plans and development standards for oil and gas projects.
- C. Promote a open and cooperative relationships among the County, the public, and the oil and gas industry, based on timely information sharing and opportunities for communication.
- D. Proactively engage oil and gas company representatives to promote cooperation and achieve mutual goals.

MOVED, SECONDED AND ADOPTED this 12th day of November, 2014, by the Board of County Commissioners of San Miguel County, New Mexico, pursuant to, in accordance with, and in furtherance of, Resolution No. 11-12-14-CP.


Nicolas T. Leger, Chairman

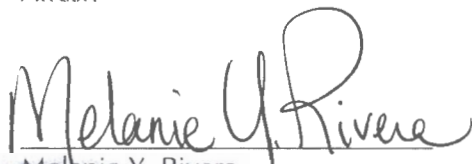

Ron R. Ortega, Vice Chairman


Marcellino A. Ortiz, Member


Arthur J. Padilla, Member


Gilbert J. B. Sena, Member

Attest:

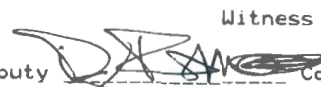

Melanie Y. Rivera
San Miguel County Clerk



COUNTY OF SAN MIGUEL)
STATE OF NEW MEXICO) ss

SAN MIGUEL COUNTY
PAGES: 68

I Hereby Certify That This Instrument Was Filed for
Record On The 13TH Day Of November, 2014 at 02:19:31 PM
And Was Duly Recorded as Instrument #201403502
Of The Records Of San Miguel

Witness My Hand And Seal Of Office
Melanie Y. Rivera
Deputy  County Clerk, San Miguel, NM

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