

University of Colorado Law School

Colorado Law Scholarly Commons

Coalbed Methane Development in the
Intermountain West (April 4-5)

2002

4-4-2002

Overview of CBM Issues in the San Juan Basin

Catherine Cullicott

Follow this and additional works at: <https://scholar.law.colorado.edu/coalbed-methane-development-intermountain-west>



Part of the Geotechnical Engineering Commons, Hydraulic Engineering Commons, Hydrology Commons, Land Use Law Commons, Natural Resource Economics Commons, Natural Resources and Conservation Commons, Natural Resources Management and Policy Commons, Oil, Gas, and Energy Commons, and the Water Resource Management Commons

Citation Information

Cullicott, Catherine, "Overview of CBM Issues in the San Juan Basin" (2002). *Coalbed Methane Development in the Intermountain West (April 4-5)*.

<https://scholar.law.colorado.edu/coalbed-methane-development-intermountain-west/14>

Reproduced with permission of the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment (formerly the Natural Resources Law Center) at the University of Colorado Law School.



Catherine Cullicott, *Overview of CBM Issues in the San Juan Basin*, in *COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST* (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law 2002).

Reproduced with permission of the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment (formerly the Natural Resources Law Center) at the University of Colorado Law School.

COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST: CONFERENCE PROCEEDINGS, SESSION 2: THE SAN JUAN BASIN

OVERVIEW OF CBM ISSUES IN THE SAN JUAN BASIN

CATHERINE CULLICOTT, *Geologist, Ecos Consulting*

The San Juan Basin is located in the central/eastern portion of the Colorado plateau. It is a historic gas and oil province; in the 1920s, oil wells and coal activities occurred around the edges of the basin, and there were fires and explosions and all kinds of problems with nuisance methane gas. And it wasn't until much later that the first coalbed methane beds were drilled. Here is a map of the Four Corners region.

A map on the next page outlines in the faint blue line the outcrop of the San Juan Basin. The coal formation is actually Cretaceous in age. It was formed, as we saw in a slide in this morning's session, that showed the Western United States with this interior seaway through the middle of it. We had a series of interbedded, inter-layered swamps—plant material with various influxes of river material, some sand tones and shales—interlayered along the western edge of the seaway. Over time, it became buried and incorporated into the San Juan Basin structures. Around the edge, particularly in here, the coal is exposed in uplifts.

Once you get across the blue line, there's no more Fruitland coal and no more coalbed methane development. One dot is a section that contains a well. And at least one well and could be oil, could be gas, could be coalbed methane. One dot could represent as many as 10 to 15 wells.

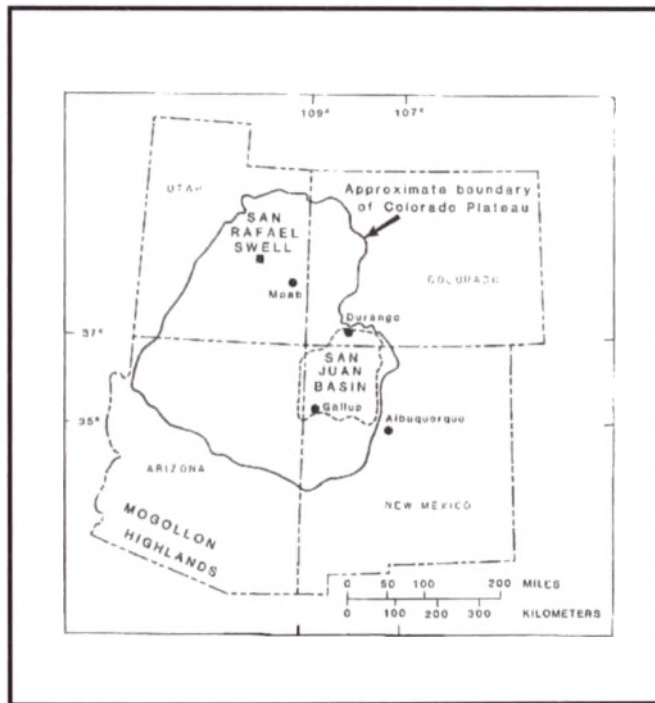
There are currently 21,000 wells just in the New Mexico part of the basin. One of the speakers this morning pointed out all of these basins seem to cross state lines.

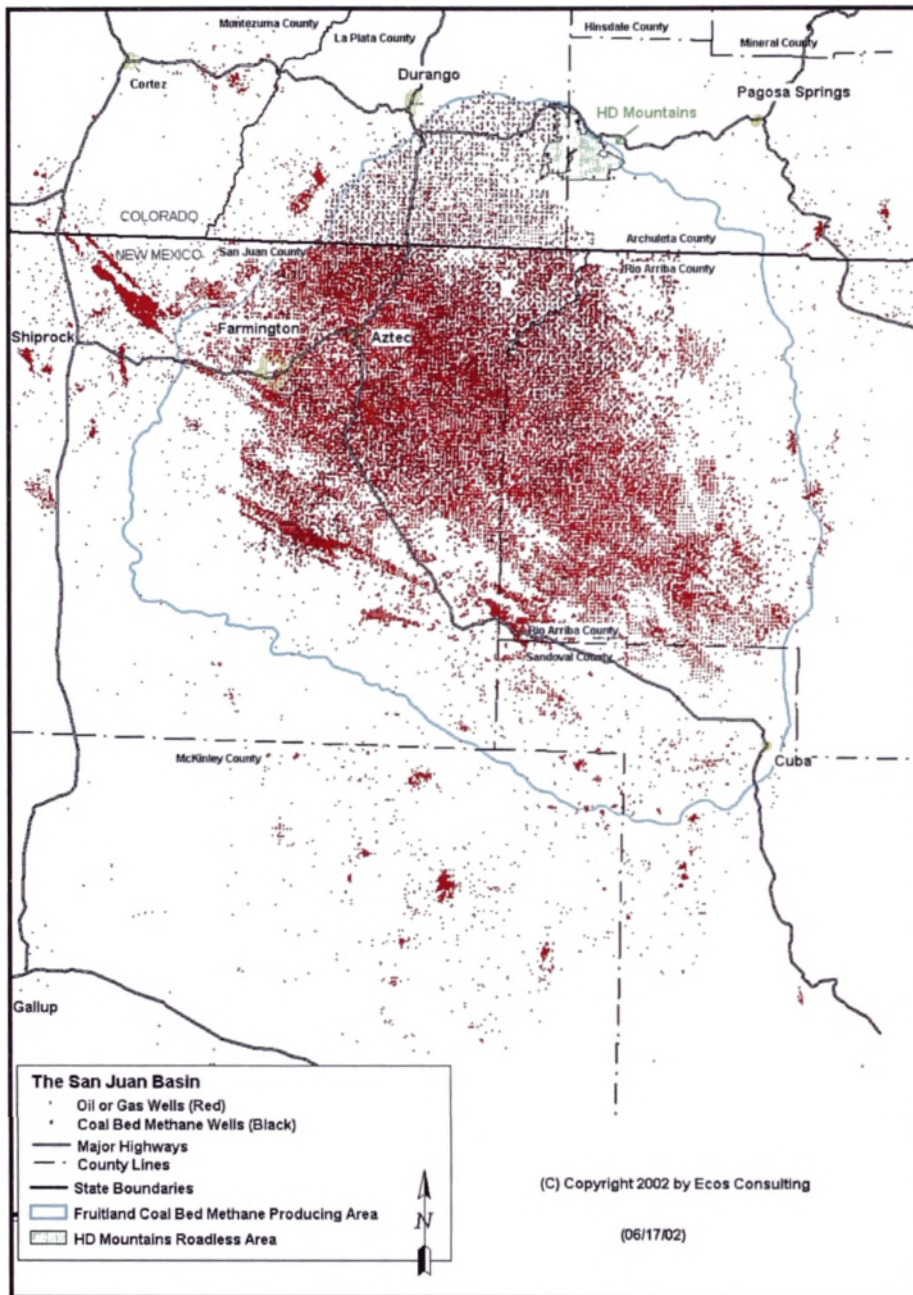
There's no one nice easy jurisdiction to them. So when the San Juan Basin is talked about, it's important to remember this state line here. We have the Colorado portion of the basin and then the San Juan Basin proper down here. This is just an example from the La Plata County only portion of the San Juan Basin in Colorado. It's just showing the new wells drilled each year, and then it's cumulative, as well, by showing pre-existing wells. And this just shows growth from 1980 to 1997

of coalbed methane wells drilled just in one part of the San Juan Basin. As a gentleman I spoke with the other day at the Farmington field office said, "Well, you folks are up in Colorado. It's down here where all the action is." That's mostly true, because in New Mexico there's about 21,000 active wells, and those are all types; conventional oil, conventional gas, as well as coalbed methane. There are currently about 4,050 producing coalbed methane wells today in the Colorado part of the San Juan Basin. And the first of the wells,

the coalbed methane discovery well, was drilled in 1976. But as we have heard and will continue to hear, these wells didn't come about in earnest until the late 1980s.

The following figure graphs this kind of growth. Notice in particular the years in the early 90s, late 80s, when the Section 29 tax credits came in, when there is a roughly one dollar for production. And the last of these





wells, the ones drilled in '92, are still getting the last of their section 29 credits this year.

These wells in the San Juan Basin produced just over three quarters of a trillion CF in 2000. And that is four percent of U.S. total natural gas production, just from this one basin. So the earlier speakers who said this is the granddaddy of them all, that's what they're talking about. As other basins come along, this will become a smaller percentage, but until recently, there's been that type of development. And then there's the question of, where does

this chart go from here? Is it going to keep going up? Is it going to go back down?

One of the speakers this morning said the San Juan Basin might be dead the terms of jobs. I think in this case, we couldn't be here having this conversation right now. Currently, it's predicted that in the current San Juan Basin, 15,000 more wells are going to be drilled. In the New Mexico portion alone, they're expecting at least 3,000 wells over the next 20 years, at least 150 coalbed methane wells in the San Juan Basin alone per year over the next two years. Expansion of production, infill

drilling is going on in Colorado right now. It's already been approved to go from 320 acres for one well to one well per 160 acres. So eventually, it will be doubling well density. It's on the books in New Mexico as well. There will be a meeting in June in Santa Fe on changing the spacing there from one well per 320 acres and one well per 160 acres. Energy consumption of natural gas in 2001 is projected at 33 trillion cubic feet. So it's going up by 50 percent here over the next 14 years or so.

We've already heard about groundwater, surface water, noise, air quality, impacts to wildlife, visual effects. Some of these effects are specific to the outcrop—again, around the blue edges of that drawing. And those include methane seeps, fire, depth education, methane in the drinking water, community and social impacts, impacts on property values, split estate—, if somebody owns a surface, somebody else owns the sub surface mineral rights.

A lot of people make a lot of money off of this development. That's definitely a driving factor in it. If

you consider the San Juan Basin, the total value of all resources removed in 2000, the total value is \$2.5 billion. Of that, federal royalties were \$325 million. So we're talking about a lot of money that makes a lot of people interested.

Finally, up in my neck of the woods, we have a real interesting situation where we've got a federally recognized roadless area that is now the subject of development. That is, as far as I know, the first time a case like this has happened, where there was land that was set aside at one point and has now since reverted back to being open for development. And, as I'm sure you'll hear, this causes quite a stir on this as well. So that's an overview. We're going to hit on most of these topics in this part of the session of the conference. We'll certainly hear about more of these issues tomorrow. But as you've heard and will continue to hear, the overall issues are similar, it's just the specifics that differ.

