Coalbed Methane Development in the Intermountain West (April 4-5) 2002

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Air Quality and CBM Development

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Finally, because I can’t resist it and my light hasn’t turned red yet, water has occupied a lot of our attention in the Powder River Basin. And I’m not in total concurrence with what the gentlemen have said so far this morning. However, I’d like to point out four things. There is a change in the dynamics of the receiving environment that we need to accommodate. We now have short reaches of perennial flows in heretofore, ephemeral and very flashy landscape. We produce no large quantity of water from every well. But from the standpoint of livestock production, we typically produce enough water per well per day for about 500 head of cows when the forage resource in the well area is about five head per day. And so the water needs to be put to even better uses than it has so far been put in order for us to optimize our water resource. And I really like the concept that Mr. Day had about considering the infiltration and recharge an important value from that standpoint. The third point I’d like to make is that water cannot be separated from its receiving environment—as we forecast the benefit and utility of that water that is receiving it.

And finally, with respect to the water, I agree with the observation that the salt levels are not high, but some of those salts come and go with drought and heavy rainfall periods, calcium and magnesium particularly, but the sodium tends to accumulate; and that calls for special management techniques.

So, in closing, I’d like to thank you very much for giving me the opportunity of visiting you a little bit. I think Wyoming is on the forefront of a lot of technical issues and a lot of community involvement and industry interaction issues. And it’s very harrowing at times, but it’s very exhilarating as well. And I have to extend thanks to everyone that’s been willing to participate in the coalition. We grow by people supporting us, and we also grow by people being critical of us. And I think that’s what we have to see is a partnership, not always necessarily a positive partnership, but a partnership in order to take best advantage of the resources we’ve been given.

Thank you very much.

AIR QUALITY AND CBM DEVELOPMENT
BOB YUHNKE, Attorney At Law

I’m going to begin here with the assumption that none of you have read the air quality review or assessment contained in the EIS, which is the only information that we really have about the air quality impacts of the coalbed methane development. I’m going to make that assumption, in part, because even if you asked for the EIS, you would not get the air quality assessment. You’d have to find the small footnote that refers to the air quality assessment. You don’t get it unless you ask for it. And then when you get it, you discover that there’s a lot of things that are missing, and we’ll talk about some of those things later. But first let me focus on what it does say about what the expected impacts will be.

The Clean Air Act divides the world up into nonattainment areas, which we don’t have here—those are areas that violate national health standards and areas that do meet the national health standards, which are in turn divided up into what are called Class II areas and Class I areas. And in this part of the world, the Class I areas consist of these five wilderness areas along the Continental Divide and the Badlands National Park and one of these caves. Another Class I area, by determination of the tribe, is the Northern Cheyenne Reservation, which was made into a Class I area back in the late 1970s. And is a management tool that the tribe adopted to try to protect its air quality from the impacts of coal development which was happening back in that period. That definitely has an impact on what’s going on now with regard to the oil and gas development in the project area.

Now, to give you a quick summary of the results of the air quality analysis, what it shows is the most significant impacts from the emissions from this development, which has to be accounted for in the context of all the other development occurring in the region. In other words, the Clean Air Act does not simply focus on the emission from a particular development or particular source, but focuses instead on the cumulative impacts of all of the activities that produce emissions into a region. And the underlying regulatory program
of the Clean Air Act that requires this cumulative impact analysis is called Prevention of Significant Deterioration, which was added to the Act back in 1977 for the purpose of trying to protect clean air areas and to prevent them from being deteriorated to the level of the national standards. Partly because even though the national standards, although intended to protect public interest, do not protect against other effects of air emissions.

So the objective was to try to make sure that areas that were already clean did not become as dirty as the national standards would allow. The PSD program requires that you assess the cumulative impacts of growth in a region and to limit the amount of new pollution that's added into those areas. Now, in the Class I areas, here (pointing to wilderness areas along the Continental Divide and in western South Dakota) and on the reservation, the limitations on new pollution that can be added are quite stringent. And the numerical increases in emissions that are allowed in those areas become, usually, the most constraining impact on development, certainly on the increasing of emissions. But there are also limits on pollutants in Class II areas about ten times greater. The limits are about ten times greater than in Class I areas. The Class II areas—and the project area itself is a Class II area—include the wilderness area here, the Cloud Peaks, Emerald Lake.

Another aspect of the Clean Air Act is to protect visibility. Visibility being identified specifically as an important value related to the wilderness experience in wilderness areas and also in the national parks, where the ability to see the natural phenomenon that a park was established to protect is often the most important aspect of the user experience of a national park. Like if you went to the Grand Canyon and you couldn’t see the other side, you would probably be upset about that. And that sometimes happens, largely due to a combination of air pollution and natural conditions. So the Clean Air Act, back in 1977, also added a provision that said that the national goal is to, over time, without setting any particular time limits, to eliminate man-made reductions in visibility in Class I areas. And the EPA has now defined that time period as being, approximately, a 60-year timeframe, starting from two years ago, to reduce the emissions from man-made activities that cause visual impairment in Class I areas. And in addition to that long-term program, there's also a requirement that new activities that will add new pollution into an area, should not deteriorate visibility in designated Class I areas. So what we see from the EIS is that the CBM project emissions and projected normal gas and oil activities in this basin, when combined with the permitted emissions in this area that's defined by the dotted line, which is called the modeling domain. The emissions from sources in that area, combined with the new oil and gas development, will cause some significant impairment in visibility.

The analyses that were performed were in the Devil’s Tower and the Class I area, plus some of these other designated Class II areas, to determine what the visibility impairment would be. There was not any assessment of this visibility impact directly within the project area, although one would expect that they would be significantly higher. In the Northern Cheyenne reservation and in Devil’s Tower, the highest visibility impairment would be expected. And in those areas, the refined analysis showed what is called a deciview, which is a ten per-
cent change in visibility that would occur at least ten days out of the year as a result of the total emissions from this. There would be approximately a 60 percent reduction in visibility in the reservation and at Devil’s Tower. The impacts within the project area would likely be somewhat greater, although that was not assessed. So from the standpoint of people living in this area or using those resources or living on the reservation, this would be a quite observable phenomena. And it would likely be something that people would become quite aware of and not be happy about if you’re used to the clear skies that most of us who live in the West love and cherish. And in the Badlands, which is the other Class I area that would most likely be effected by visibility there, it was predicted that for three days out of the year, there would be a 10 percent reduction, and the peak visibility would be a 25 percent reduction on the worst day.

Now, in addition to those impacts on visibility, closely tracking those impacts, would be increases in fine particles. And, in fact, it is the fine particles that are responsible for visibility impairment. Fine particles have the greatest impact on human health. You may have read in the press last week, after three years, a decision from the Court of Appeals in Washington, D.C., from the 1997 fine particle rule making, came down. That standard is 15 micrograms. What the analysis here shows is that final particle concentrations within the project area would increase by approximately 50 percent compared to baseline levels, which would be a 100 percent increase in man-made particles, taking into account the fact that some of them are natural. The EIS predicts fine particles with average 12 micrograms per cubic meter annually, which is low compared to the EPA standard of 15. You also might want to compare it with the proposed new California ARB standard for particles, which is 12, based upon the most recent evidence of the adverse effect of fine particles, which has come out since the EPA proposed its standard in 1996. So those could very well affect human health. And, in fact, 24-hour daily concentrations could be well above the levels that have shown increased mortality in studies. And this may well be the most significant impact, although it would not be prevented by any of the standards that are currently in place.

It’s also worthy or important to note that there is no PSD limit on fine particles, because the act required the EPA to set a PSD limit for fine particles. That obligation ripened and expired back in 1999, but the EPA has not done it. Somebody’s going to have to sue them to make them do it. And if they set PSD limits for fine particles that was in any way similar to those that were set some 20 years ago for PM10, this increase in fine particle pollution in the area would likely exceed those limits by more than a factor of two. So that, if limits were set for fine particles on the same kind of ratio that was set for PM10, this development might well exceed those limits, at least based on this analysis.

And then finally, for PM10 itself, which is a larger sized particular, which is the difference between fine particles, which are particles less than 4 PM10, which is particles that are between 2 and a half and 10 microns in size, is that the 4PM10 particles appear to be somewhat less deadly in terms of human health. But they still cause significant impacts in terms of adverse health affects. The analysis shows, again, there would be a 37 to 50 percent increase in Class II areas and significant increases in Class I areas. But the largest increase is in the Northern Cheyenne reservation, where over half of the increment allowed under the PSD program would be consumed according to this analysis. This analysis does not show any violations of the PSD increments themselves. So what needs to be focused on are the visibility impacts, which have been demonstrated, and the unacceptable impacts resulting from the relatively high fine particle concentrations. Now, that being said, it’s important to understand what the limitations of this study are, and they are considerable.

And, in fact, I think if the EPA took an honest and careful look at this analysis, they might have to conclude that this was an unacceptable analysis from the standpoint of NEPA. One of the most critical deficiencies in this study, and if you could put up my outline, is that it fails to account for the emission inventories that resulted from development between the time that the baselines were set for PSD and the present. The baseline dates for the PSD program is determined when you start counting increases in emissions from new development. Baseline dates for that particular matter and SO2 were set back in 1979, and for nitrogen oxides in 1988. This analysis only looks at emissions from new sources that were permitted after 1995.

So all this development that occurred between 1979 and 1995 has been left out of the analysis all together.
And those sources include some major power plants like Coal Strip. They include the Moon Lake power plant over in northeastern Utah, the Craig Power Plant in northern Colorado. All of these were major sources that consumed some of the allowable emission increase under the PSD program early on in the early 80s. None of that was accounted for in this analysis. And then there has been a lot of oil and gas development in the Green River Basin, none of which has been accounted for in this analysis either. The western boundary of this study area, the Washakie and the three wilderness areas in the Wind River Range, for example, are significantly impacted by emissions from the West and the Southwest. All of that development in the Green River Basin, oil and gas, and the new power plant being proposed for that region, none of that was accounted for in this analysis. So when you start to look at all of the major sources of pollution that were left out of this study, recognizing too that you know the wind doesn't just blow from the East to West. The wind will blow some of the emissions, from time to time, from this area to the West to the wilderness areas along the Continental Divide. And those emissions will add to the emissions from all that has occurred to the West and Southwest of those areas. There are a lot of impacts here that have been ignored. And that also is true with regard to some of the development of the Northern Cheyenne Indian Reservation in Montana and to the east in South Dakota.

So there are a lot of deficiencies in this analysis that they've left out as far as major sources of emissions. In addition, there appears to be a significant mismatch between the estimated emissions from that development itself, based on the fact that the air quality analysis was based upon the assumption that there would be 39,000 wells in the basin. And you heard this morning from the Oil and Gas Commission chairman that the expected number of wells to be developed in this area will exceed 50,000. So that there appears to be at least a 35 percent omission of the total emissions that should have been estimated from this development. So when you put all these things together, what it says is that the total emissions, if they were properly accounted for, could very well be showing violations of the PSD increments. I think I mentioned that I wanted to address the cumulative impacts in increments.

Some of the other issues that have not been addressed, partly because of regulatory failures of the EPA, include the failure to set the PSD increments for fine particles and the failure to respond to a remand from the Court of Appeals in a case challenging the adequacy of the nitrogen oxide increments back in 1990. The EPA, 12 years later, has done nothing, even though the Court told them to revise the increments for nitrogen oxides. That still has to be addressed.

Then finally, a couple of major issues relating to the responsibility of the Secretary of the Interior. The Secretary has a statutory duty to deal with visibility impairment. There is no discussion anywhere in this EIS about how the Secretary will carry out that responsibility. NEPA requires that there be consideration of mitigation measures to mitigate adverse impacts. Here the adverse impacts have been clearly demonstrated. This is no analysis of the mitigation that the Secretary intends to implement to carry out that responsibility to protect against visibility impacts. And there is no discussion of her responsibility to protect the tribal lands, given her responsibility to carry forth the trust responsibilities of the United States to the tribes. And then finally, there are FLPMA requirements that require leasing decisions or permitting decisions by BLM to not allow any violations of air quality standards. And to the extent that we are seeing here, some potential violations of increments, this air quality analysis was not properly done. That draws into question how the BLM will carry out its obligation to address those impacts in that impact statement.

So there are a lot of unanswered questions here and some very important environmental consequences that need to be addressed.

[additional information provided by the speaker follows]
ISSUES REGARDING AIR QUALITY
ANALYSIS FOR OIL AND GAS
DEVELOPMENT IN THE POWDER RIVER BASIN

I. Emissions inventories—

A. Modeling Analysis Based Only on Recently Permitted Sources:
Emissions from only those new sources permitted since 1995 are included in modeling analysis. Increment consumed by major sources permitted after the PSD baseline dates (1979 for PM10 and SO2; 1988 for NO2) not included in the analysis. Among impacts excluded from analysis are emissions from major power plants including Colestrip (southern MT), New Moon (north-eastern UT), Craig (northern CO). Emissions from existing and planned oil and gas development in Green River Basin, and proposed power plants (eg, Roundup Plant in southern MT) also not accounted for. These sources could significantly increase increment consumption and AQRVs in WAs on the western boundary of the modeling domain, and the N Cheyenne Indian Reservation.

B. Regional Unpermitted Minor Sources, Area Sources, Transportation Emissions Not Included.

C. Mismatch Between Estimated Wells Under Reasonable Development Scenario and Emissions From Well Pads Differ by 100%: RD moderate scenario estimates 81,000 wells in 5 county area over life of the project, with 50,000 wells by 2010. AQ assessment assumes 39,000 wells.

II. Modeling domain too narrow to address cumulative impacts on increments, AQRVs in Class I areas.

A. Wyoming Class I Areas: no assessment of impacts of emissions from sources in SW Wyoming, N Colorado, NE Utah. Could be important for Class I areas along western boundary of modeling domain.
B. South Dakota Class I Areas: no assessment of impacts of emissions from sources east of model-

III. Clean Air Act requirements not implemented.

A. PSD Increments for PM 2.5—CAA §166.
Near-field cumulative PM2.5 concentrations will increase annual concentrations by more than 50% to 12 µg/m3. Would likely violate a Class II increment set under §166.

B. PSD Increments for NOx—CAA §166, EDF v. EPA, (D.C. Cir. 1990).
Court remanded NOx increment rulemaking to EPA to set increments for NO3, in addition to NO2, or for total NOx. EPA action on remand is still pending. NO3 concentration might violate Class I increment set under §166.

IV. FLPMA requirements.

A. 43 U.S.C. §1712(c)(8) requires that management plans "provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementation plans . . . "

B. BLM regulations require that this statutory mandate be implemented by requiring that—

Each land use authorization shall contain terms and conditions which shall: (3) Require compliance with air and water quality standards established pursuant to applicable Federal and State law. 43 CFR §2920.7.