

**West Slope Colorado Oil and Gas Association
DRAFT HIA Comment Review Meeting**

January 31, 2011

11:00pm – 2:00pm

Williams Denver office

Attendees:

WSCOGA – David Ludlam

Antero – Lars Inman, David Simon, Jerry Alberts, Rob Strode (consultant to Antero)

Williams – Mike Paules, Susan Alvillar, Rick Matar, Dennis Smith (consultant to Williams)

Bill Barrett Corporation – Doug Dennison

Colorado School of Public Health (CSPH) - Dr. Roxana Witter, Dr. John Adgate, Dr. Lisa McKenzie,

Jim Rada, Garfield County Public Health (GCPH)

Meeting Notes:

Dr. Witter began the meeting by pointing out that this extended stakeholder effort is at the direction of the Garfield County Board of County Commissioners (BOCC) to help the HIA team and the stakeholders gain more clarity and understanding of the issues and concerns expressed in the comments on the Draft HIA in order to improve the final product. She also explained that follow-on meetings would be conducted with the BOCC and an open stakeholder meeting would be held following these initial meetings.

Mr. Ludlam added context to the meeting stating that WSCOGA has concerns about non-governmental organizations and media coverage of the HIA explaining that it is his organization's desire to see sensitivity on language to avoid politicizing outcomes of the HIA effort.

Dr. Witter spent some time restating the purpose of the HIA indicating that there is a variety of uses for HIA. The use of HIA is gaining ground in the US with the purpose of including health as part of the discussion around land use, natural resource development and a variety of other types of issues. Another purpose is to address concerns or lessen health impacts related to proposals. HIA is not designed to derail proposals but more so to establish a process for communities to work with industry or other proponents. Dr. Witter mentioned that the International Oil and Gas Association has put out a HIA Guide for oil and gas projects. She then reiterated the purpose of the Battlement Mesa HIA. This project will be used to inform the BOCC, at their request. It also attempts to assess baseline health conditions related to the identified stressors of concern utilizing existing data and information. No new data is being developed/gathered specifically for this project. This is part of the contractual scope of work and is due to the short time frame for this HIA under the county contract with CSPH.

Dr. Adgate stressed that the HIA is different than a Health Risk Assessment. He stated that many of the comments received involved the Human Health Risk Assessment (HHRA) section of the HIA and emphasized that the range of comments is really what has led to this extended public review process.

Dr. McKenzie continued with a discussion of planned modifications to the initial draft HIA. She stated that there will be a change to the ratings used for the various health impact assessments due to confusion caused by the initial numerical rankings. The new rankings will be qualitative in nature (something like high, medium, low). Mr Smith asked how this was determined. Dr. Adgate stated that the change was needed because the scale was not linear and the purpose of the ranking system is really to provide information as to the relative magnitude of effects. The qualitative rankings will be determined using best professional judgment. Dr. Witter stated that these rankings are really intended to create context for discussion as to where to place emphasis for impact mitigation relative to the various stressors that were assessed.

Dr. McKenzie added that new existing data generated after the initial draft HIA release will be incorporated into the next draft. This will primarily be air quality data from the Bell/Melton ambient air sampling site through November and the air quality data from the newly established Battlement Mesa ambient air quality site from September to November 2010.

Dr. Mckenzie added that a new senior citizen exposure scenario will be added to the HHRA. Seniors will be defined as individuals over 65 years old.

Mr. Inman announced that there will be an Antero Resources Annual Operations Meeting at the Battlement Mesa Activity Center at 6:30 pm on February 10 and invited anyone to attend.

Dr. Witter reviewed the timeline for the remaining steps in the HIA report development process.

Remaining HIA Steps:

January – Small stakeholder group meetings

January 7, Antero and CDPHE

January 19, Battlement Mesa Citizens/Community representatives

January 31, West Slope COGA

February – Full Stakeholder meeting, update BOCC, meeting dates TBD

February 28 - 2nd draft HIA Release for Public Comment

March BOCC update, Stakeholder update

March 31, public comment period closes,

April 30, Final HIA release

May BOCC Briefing, Public meeting regarding final report

Mr. Rada emphasized the original BOCC directive that this process be open and transparent. Much attention will be paid to communication and transparency over the remaining time of this project.

Mr. Paules expressed the importance for key messages not to support individual stakeholder agendas regarding things like potential risks. He stated that rules exist to address risks. Antero may go beyond the regulatory structure to further mitigate risks. As a prototype HIA the team needs to put risks and priorities in order so that BMPs (Best Management Practices) put industry on target to address the risks. Dr. Witter responded that the team was asked to assess smaller scale risks, smaller than ambient air quality. Ambient air quality does not address exposure to local (close in) residents. Dr. Adgate responded that regulations are not often truly health-based. The HIA attempts to connect BMPs to health risks.

Mr. Paules expressed concern that the way risks are stated in the HIA may cause industry workers to ask why their employers are not telling them about health risks. He emphasized the need to carefully word how risks are stated.

Dr. Witter stated that data related to air exposures at different setbacks is not available. If it becomes available, the team may be able to address these risks more directly.

Ms. Alvillar asked if comments and responses will be posted before the 2nd draft is released. Dr. Witter responded that the team is trying to avoid receiving comments by one stakeholder on comments by another stakeholder. The focus of the 2nd public comment period will be on the revised text.

Dr. McKenzie continued with a discussion of the Industry comments on the HHRA. Mr. Smith expressed concern that the data used for the HHRA did not include any discussion of data quality validation or if the data used was for the intended purpose of HHRA. Mr. Matar asked about what data was used stating that Williams had reviewed the data from Garfield County 2008 EPA RGI grant study. Mr. Smith expressed additional concerns related to the “ensemble of data” used, conventional evaluation, that reports are not validated, noting the presence of methylene chloride in samples. He stated that he had followed the earlier assessments done by the county and expressed his perspective that we should be beyond the screening level risk assessment, perhaps at a Tier 1 or Tier 2 level. Dr. Adgate and Dr. McKenzie responded that a screening level risk assessment was conducted for the HIA based on the amount and type of data and information that was available. Dr. McKenzie went on to say that the team has the appropriate level of information to conduct a screening level risk assessment and that they can address the uncertainties of this assessment more clearly in the next draft. Dr. Witter emphasized that if additional usable data is available, that the team would be willing to make use of it but they will not make changes to exposure scenarios from default approaches unless there is sufficient data to do so. Mr. Smith suggested that it appeared that the researchers had grabbed maximum concentrations or had done other types of data sorting in developing the risk assessment. He suggested that he could sit down with the team and create a representative exposure potential using various accepted risk assessment methods and come up with a more practical, believable and reasonable exposure scenario. Dr. McKenzie explained how exposure data were developed and that she had not done any data sorting. Following this exchange, Mr. Smith stated that the explanation made more sense and suggested that better models are needed for this type of exercise. Dr. McKenzie agreed but stated that we do not have sufficient data at this time to build a good model. Mr. Matar suggested that the team pick up average data to use for time weighted averages in the HHRA, as it is numbers that stick in peoples’ minds.

Mr. Paules asked if the HHRA numbers are pre- or post emission control. The team responded that the emission numbers were post emission control since the data were from years since new rules have been in place.

Mr. Alberts asked if the setback averages for the 2008 data could be added to the table in the HHRA for well completions. The team responded that they would attempt to accommodate this request.

Mr. Smith offered to help improve the HHRA during the remaining time of the project including improvements to the presentation of the HHRA results. As an example, he suggested that a 10^{-4} risk level be equated to added cancer risk relative to background cancer risk (.3 → .3001).

Mr. Smith also asked if the team had reviewed Dr. Coons work (2008) that suggested that there was not increase in disease incidence in Garfield County related to oil and gas development activities. Dr. Adgate acknowledged that they reviewed this work.

Dr. Witter continued with a discussion of the HIA air quality assessment. She stated that the air quality assessment includes information from the HHRA and concerns related to the Watson Ranch pad odor issues from the summer of 2010. She explained that the point of the assessments is to provide background information to the BOCC in order to support the impact mitigation/enhancement recommendations.

Moving on to the water quality assessment in the HIA, Dr. Witter stated that the recommendations in this section are geared toward protection of the secondary water source. She agreed that a hydrogeological study is needed. Mr. Paules stated that there is some hydrogeological information available for areas near Battlement Mesa but that information more specific to Battlement Mesa would be useful. Mr. Inman stated that there is probably no Green River formation present on Battlement Mesa but that there may be some physical connection to the Green River formation upgradient from Battlement Mesa.

Mr. Inman stated that some of the recommendations may include things that are covered by regulations. Dr. Witter stated that Antero's intended BMPs will be recognized in the HIA. Mr. Alberts stated that Antero intends to include BMP that they currently used in their gravel trend area.

Mr. Inman asked about Garfield County intervention on pads outside of the PUD to be based on completion of the HIA. Mr. Rada stated that he was not familiar with this action but would follow up with Mr. Inman.

Dr. Witter addressed the Traffic assessment. She mentioned that even though Antero intends to reduce traffic with its water management system, it is the remaining traffic associated with the development that is discussed in the HIA. Mr. Paules emphasized that industry uses a variety of tools to control traffic and motor vehicle accident issues.

Regarding the community health assessment, Dr. Witter started by stating that the sexually transmitted disease issues, impacts to schools would likely be very small and some issues are not measurable. She mentioned that citizens have raised concerns about community disruption, change from residential to industrial community, and mental health impacts that can lead to negative physical health outcomes. Mr. Paules indicated that industry often becomes the lightning rod for all issues that people claim to experience when industry moves into an area.

Mr. Inman asked about land values impacts and incorporation of this information into the HIA. Dr. Witter stated that, at the direction of the BOCC, the team will be incorporating references to the 2006

Garfield County Land Values Study into the next draft. She mentioned some oil and gas development influences on land values that are included in this study.

Mr. Paules asked what the team needed in completing the next draft of the HIA. Dr. Witter suggested that the team would accept and evaluate any additional relevant data that the industry could provide. Ms. Alvillar asked if there is any information as to how many people have reported community/personal health impacts. The team indicated that specific data are not available.

Mr. Dennison suggested that the team build in a perspective to the HIA that the industry operates within a multi-layered regulatory structure and that many of the impacts described in the HIA are already addressed by existing regulations. He requested that the HIA team do everything they can to represent a balanced approach. Dr. Witter noted that the HIA represents an opportunity to show that health and industry can go hand in hand.

Mr. Paules raised concern that methylene chloride and most chlorinated hydrocarbons are not used in the industry suggesting that its presence in ambient air samples might indicate its presence as a lab contaminant. Dr. McKenzie responded that not all samples showed the presence of methylene chloride and that it is difficult to rule this compound out as an industrial emission when we do not know what all is used in gas industry processes.

Mr. Ludlam recommended that the team strive to integrate context into the front-end of statements to prevent individuals from grasping on to pieces of information without the supporting context. Ms. Alvillar also suggested that the team emphasize the missing information in the context of these statements.

Mr. Strode stated that there is no mention of lab contaminants in the HHRA and that they may not be able to agree with the final report. The level of uncertainty is not strongly stated. Dr. McKenzie stated that the baseline risk assessment for Battlement Mesa which will be added to the next version of the HHRA will help put the carcinogenic risk into perspective and direct the emphasis of the HHRA to health effects from short term exposures during the well development phase.

Dr. Witter shared that the next meeting would involve some level of presentation and time for questions. The discussion would be around the types of concerns shared by stakeholders including similarities and differences. She hopes to focus the meeting more toward the recommendations in the HIA. Notes from these smaller stakeholder group meetings will be shared in advance of the meeting.

Mr. Ludlam raised the matter of the broader policy implications of the HIA as stated in the draft document. Dr. Witter responded that health impacts related to oil and gas development in residential area are occurring across the country. However, policy decisions at that scale are beyond what the BOCC can decide. She stated that if health is included at higher levels than an HIA wouldn't need to be part of all decision making processes. Acknowledging Mr. Ludlum's concerns, Dr. Witter noted that this HIA is not likely the final word on this topic. Mr. Ludlam responded that broader policy implications should be outside of this project.

Mr. Inman asked when more positive mental health aspects of their project can be incorporated into the HIA (i.e. greater income to local businesses, new park facilities, money donated to the community). Dr. Witter responded that if Antero has this type of information, they should provide that to the team. Dr. Witter also noted that it will be important for Antero and the citizens to understand and plan for a long term association since this project will be a part of the community for 30 years.