



Elizabeth H. Richards, *Chair*
Jennifer Thacher, *Vice Chair*
John S. Derr
Steve Glass
Kerry J. Howe

Stephanie J. Moore
Russell D. Pederson
Caroline Scruggs
Erik K. Webb

Water Protection Advisory Board
c/o ABCWUA
P.O. Box 568
Albuquerque, NM 87103

Minutes: May 13, 2016

Location: Bernalillo County Public Works Division, 2400 Broadway

Time: 8:35 a.m. – 10:30 a.m.

Board Members Present: Chair Beth Richards, Vice Chair Jennifer Thacher, Steve Glass, Kerry Howe, Stephanie Moore, Russ Pederson, Erik Webb, John Derr and Caroline Scruggs (via teleconference).

Board Members Absent: none.

PIC Members Present: Mark Kelly, Jane DeRose-Bamman, Ken Ziegler, Bart Faris, Kathleen Verhage, Dan McGregor, Sara Chudnoff and Rick Shean.

Guests: Mike Neas, Bruce Thomson, Pat Chavez and Bob Wessely.

I. Call to Order

Chair Beth Richards called the meeting to order at 8:35 a.m.

II. Approval of Agenda

Chair Richards requested a motion to approve the agenda.

Motion was made by member Steve Glass and seconded by member Dr. John Derr. Motion to approve the agenda carried unanimously.

III. Approval of Minutes

Chair Richards requested a motion to approve the draft April minutes.

Motion was made by member Steve Glass and seconded by member Dr. Derr. Motion to approve the minutes carried unanimously.

IV. Presentation: *Potential Impacts of Oil and Gas Development on Groundwater Resources: Middle Rio Grande Basin Hydrogeology and Vulnerability to Impacts from Fracking*

Dr. Bruce Thomson, UNM Civil Engineer and Water Resources Program Professor Emeritus, followed up on his March 2016 presentation to the WPAB and provided a discussion on the hydrogeologic properties of the Middle Rio

Grande Basin and threats posed by oil and gas operations to the local drinking water supply.

Dr. Thomson reminded the board of his first presentation, stating that fracking itself is not the cause of contamination to groundwater resources, but surface spills and disposal of produced water and other oil and gas development wastes. Dr. Thomson added that fracking combined with horizontal drilling has created public concerns over oil and gas development, due to the higher density of extraction operations possible when combining these technologies.

Dr. Thomson told the board that groundwater movement in the Middle Rio Grande Basin (MRGB) is controlled by a series of faults, running north to south, and ancestral deposits along the axis of the rift valley. According to Dr. Thomson, work by Dr. John Hawley and Dr. Sean Connell, formerly of the New Mexico Bureau of Geology and Mineral Resources, provided the framework and understanding of the hydrogeologic controls in the MRGB. Dr. Thomson further explained that Albuquerque has a world-class aquifer with productive and heterogeneous hydraulic conductivity properties, but groundwater movement either north or south, depending on the downgradient direction (i.e., parallel to the faults) is the general horizontal direction that contamination can migrate faster in the aquifer. Migration of contamination in the east and west directions is possible, but a much slower rate, according Dr. Thomson.

Dr. Thomson also said the nature of the chemicals associated with oil and gas operations, including the hydrocarbons, fracking fluids and produced water (if disposed at a proper facility), do not tend to travel far from the source of contamination. Dr. Thomson explained that hydrocarbons are biodegradable and adhere to soil readily, thus preventing contamination from being extensively mobile. Dr. Thomson added that fracking fluids are not considered toxic, and produced water, when disposed of at an off-site facility versus reinjected, is kept from entering a drinking water source.

Dr. Thomson told the board that [if] the SandRidge exploratory well had been drilled and become a production well, it would probably have not been completed with horizontal screens. According to Dr. Thomson, given the distance of the well site from Rio Rancho and the hydraulic conductivity being approximately one and a half feet per year, that any subsurface contamination from the proposed oil and gas operations would be thousands of years of transport away from the local drinking water supply wells. In addition, Dr. Thomson said the increased risks associated with oil and gas operations are

related to greater truck traffic and truck spills and waste disposal, than contamination from an oil production well.

Board Discussion:

Board members discussed the fact that an exploration well provides good data about geology, in addition to oil and gas reserves. In addition, members felt that there are some risks associated with the production casing, given that that proper casing procedure may not always be followed and inspection of casings is not possible without expensive techniques. It was noted by members that if the SandRidge exploratory well had been drilled and found sufficient reserves for production, many production wells would have followed. The board was told by County staff that the western part of Bernalillo County has the potential of oil and/or gas reserves.

V. Presentation: *Considerations for Local Oil and Gas Regulatory Ordinances – An Overview for the Water Protection Board*

Dr. Bob Wessely, Co-founder SciSo and member of a San Miguel County oil and gas regulation citizen task-force provided the board with insight on how to develop local regulations for oil and gas activities. Dr. Wessely suggested that the recent uproar over the now defunct exploration well proposed by SandRidge Energy was in part caused by misinformation from both sides of the debate.

Dr. Wessely told the board that during the citizen task force's evaluation, which culminated into an ordinance passed in late 2014 in San Miguel County, two guiding choices were evident: (1) to what extent will the local government want to pay for the costs imposed on itself, and; (2) to what extent will the local government protect the health, welfare and safety of its citizenry?

Dr. Wessely told the board that a common-sense approach for oil and gas regulations provides that oil and gas companies operate transparently and competently, are open to inspections and monitoring, and cover the cost of the oversight. Dr. Wessely added that regulations cannot be arbitrary and capricious, but should be based on a government body's findings through testimony, analyses, scientific reports and data.

Dr. Wessely said local regulations for oil gas operations can be necessary, because state and federal regulations address "down hole" issues and not surface issues. Dr. Wessely added that the location for local oil and gas regulations is within a county's land use and zoning ordinance, and ordinances

can apply to all kinds of oil and gas facilities, such as exploratory wells, pipelines, and roads, for example. Dr. Wessely offered the board examples of ordinances the citizen task force used during their creation of the San Miguel ordinance, and an extensive checklist for ordinance creation.

Board Discussion:

Board members discussed their interest in sending a letter to the Bernalillo County Commission recommending that oil and gas regulations be included in the zoning ordinance. Members noted that additional presentations may be helpful in determining the board's position on an ordinance, but some members did express that an oil and gas ordinance may be appropriate. Members also discussed whether or not an oil and gas ordinance would be a priority for the county commission, but it was noted that it was the board's duty to push items that they believe should be a priority for the elected officials and entities they advise. Members asked staff to track the progress of Sandoval County's oil and gas ordinance efforts and to contact the New Mexico Tech Petroleum Recovery Research Institute for input.

VI. PIC Agency Updates

Mr. Rick Shean of the Albuquerque Bernalillo County Water Utility Authority (Water Authority) told the board that the Water Authority is working on an update to its Water Resources Management Strategy (WRMS) and that he provides updates to the Water Authority regarding the Water Protection Advisory Board's activities and implementation of the Water Protection Policy and Action Plan.

Kathleen Verhage of the City of Albuquerque Stormwater Team said that they had finished their stormwater sampling plan for their watershed-based municipal separate storm sewer system permit.

VII. Other Board Business – none

VIII. Public Comment Period

Mr. Mike Neas told the board that Bernalillo County should consider an oil and gas ordinance. Mr. Neas added that many spills have happened at oil and gas operations and that the proximity of fault lines and abandoned wells need to be considered with respect to the ability of contamination to reach drinking water supplies.

IX. Adjournment – 10:30 am