STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF THE PETITION FOR	**)**	
HEARING TO ADOPT NEW REGULATIONS	**)**	
AND TO AMEND VARIOUS SECTIONS OF	**)**	
20.2.1, 20.2.2, 20.2.70, and 20.2.72 NMAC,	**)**	
STATEWIDE CAP ON GREENHOUSE GAS	**)**	
EMISSIONS	**)**	**No. EIB 08-19(R)**
	)	

PREPARED REBUTTAL TESTIMONY

OF

RON COLLINGS

ON BEHALF OF

NEW ENERGY ECONOMY

AUGUST 6, 2010

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name?

A. My name is Ron Collings.

Q. Where do you reside?

A. I live in Aurora, Colorado.

Q. By whom are you employed and in what position?

A. I am currently Vice President and Senior Petroleum Engineer at Ruby Canyon Engineering Inc, which is a consulting firm that provides a broad range of technical consulting services to companies wishing to conduct greenhouse gas (GHG) inventories, report emissions to the U.S. EPA, and plan strategies for reducing their GHG emissions.

Q. Please describe your background, education and qualifications to testify in this proceeding.

A. I am a Registered Professional Engineer with specialized knowledge in petroleum engineering and coal bed and coal mine methane recovery. I have worked in various aspects of hydrocarbon exploration and production for 31 years, including working for Chevron for 18 years. My education and experience are further described in detail in Rebuttal Exhibit R64.

Q. For whom are you representing this rebuttal testimony?

A. I am testifying on behalf of the Petitioner, New Energy Economy.

Q. What is the purpose of your testimony?

A. NEE has petitioned the Environmental Improvement Board to adopt a rule that regulates greenhouse gas emissions in New Mexico. On July 16, 2010, opponents of the petition filed their testimony. My testimony rebuts the testimony of opponents filed on July 16, 2010 testifying on

behalf of New Mexico Oil and Gas Association (NMOGA), regarding the limitations on available technologies to reduce methane and carbon dioxide.

Q. Are there opportunities to reduce GHG emissions in the oil and gas sector?

A. This is an industry filled with innovative people. They know how to reduce emissions. As mentioned in some of the industry testimony, EPA's Natural Gas Star program has numerous examples of technologies or practices to reduce methane emissions in the oil and gas industry. All of these were developed by oil and gas industry professionals.

Q. Would you describe the types of emissions reductions that have been developed and highlighted in EPA Gas Star program?

A. There are 89 discrete practices or technologies for methane reduction in the oil and gas sector. These include reduction options in for oil and gas production (e.g., at well sites, gathering lines), processing (e.g., natural gas plants) and transmission (e.g., larger pipelines). The technology options break down as follows) (see Exhibit R65 on Natural Gas Star Recommended Practices):

- Compressors/Engines – 15
- Dehydrators – 10
- Pneumatics/controls – 6
- Pipelines – 9
- Tanks – 8
- Valves – 15
- Wells – 11
- Other – 15

Q. Testimony from Bruce Gantner and Jennifer Knowlton suggests that it is not cost effective to reduce fugitive emissions from gathering lines. [Gantner Testimony, p. 17, 18; Knowlton Testimony, p. 9] For example, Bruce Gantner states that, "LDAR has not been required and operator examination of this technique has not proven it to be cost effective in screening gas gathering systems comprised of thousands of miles of pipeline or for

upstream wells that in the San Juan Basin are spread throughout a 2700 square mile area. In general, fugitives account for less than 2% of total GHG emissions estimates for the upstream and midstream segments, so any efficiency gained from field-applied LDAR would be immaterial." Is it even possible to detect leaks on gathering lines that cover thousands of square miles?

A. There are options to reduce emissions from gathering lines. While it is true there are thousands of miles of gathering lines in New Mexico, operators have various options for detecting and fixing leaks in gathering lines.

If it's a small area of concern, a good option is to walk the lines. Chevron instituted an annual inspection program of flowlines that connect gas wells to compressor stations or processing plant booster stations. They used ultrasound detectors, odorants and other leak detection devices while performing walking inspections. The costs for this method are low. They include the cost of paying a few employees to walk the gathering lines, and the purchase of leak detectors or other devices, which might run a few hundred dollars per employee. The idea is to catch small leaks and deal with them before they turn into larger emission sources. (See Exhibit R66 on Gas Star inspect flowlines)

In cases where a company has hundreds or thousands of miles of gathering lines or pipelines, aerial surveys combined with remote sensing devices can be extremely effective at catching a high percentage of leaks. There is an EPA Gas Star article that explains why and how DCP Midstream (co-owned by ConocoPhillips and Spectra Energy), which operates in New Mexico as well as other states, surveyed 66,000 miles of its gathering lines using an aerial optical imaging laser system called ALPIS (airborne lidar pipeline inspection system). Previously, this technology had only been used on larger transmission pipelines. ALPIS was successful in

identifying the leaks, but when DCP employees on the ground tried to locate the leaks they were only finding 70-80 percent of them. DCP wanted to improve on this, so the employees in the field started using a handheld remote methane leak detection devices and were able to pinpoint 97% of the leaks identified in the ALPIS aerial surveys. Using a combination of technologies DCP was able to reduce its lost or unaccounted emissions, which at the time equaled 1.5 percent of the gas entering DCP's system, by 50%. The presentation did not include cost or volume information, so I don't know if it was deemed cost effective. But the company continuing its aerial survey program, so it must have at least come close to paying for itself. According to Bob Berry, DCP Midstream BTU Efficiency Manager, "Lost gas is not just an equipment integrity or environmental issue; it is also a financial issue. The more gas we process through our system and deliver to our customers, the more profitable we are." Berry now considers optical aerial surveys as "one of DCP's primary tools, and it is very effective." [See Exhibit R67 on Natural Gas Star 2008 - pages 1, 4, 6]

If it works for DCP, it is highly like that other gas gathering systems may also be able to realize benefits from aerial leak detection technologies.

Q. Are there opportunities for reducing greenhouse gas emissions in the oil and gas sector that were not addressed in the testimony provided by industry representatives?

A. One area that was not included in the oil and gas industry's testimony was information on emissions reductions from larger pipelines or transmission pipelines. There are a number of ways that natural gas and hydrocarbons can escape from pipelines.

What I'm going to focus on in this testimony are the emissions that occur when large sections of a pipeline are evacuated of natural gas during repair or maintenance operations. Standard practice for pipeline companies is to vent the gas to the atmosphere. According to EPA

Natural Gas Star, in 2004, an estimated 12 billion cubic feet (Bcf) of methane was vented to the atmosphere during routine maintenance and pipeline upsets.

There are numerous ways to conserve most of this gas. One excellent example is through pipeline pump-downs, which involve reducing the gas pressure within a selected segment of pipe before conducting any maintenance or repairs on that section of pipe. It sounds very obvious, yet some pipeline operators still simply vent all of the gas within an impacted section of pipe prior to performing their repairs.

Pipeline pump-down can be achieved by using in-line compressors, portable compressors or a combination of the two to draw down the pressure in the pipe. Not only does this reduce the amount of gas vented (or conversely increase the amount of gas that will be sold), it also reduces odors noise and hazards that accompany the venting of large quantities of gas. It can also significantly decrease the volume of hazardous air pollutants released during pipeline venting. On average, pipeline operators that have used pump-down techniques have been able to reduce methane emissions by 200,000 mcf per year, or between 50% to 90% of the gas traditionally vented. The revenue from the conserved gas depends on the selling price of natural gas, but assuming a price of $4/mcf, an operator could save $800,000 per year, and payback of their investment would occur within a few months. [See Exhibit R68 Natural Gas Pumpdown, page 1]

Q. If they can make a profit, why haven't the various technologies listed in EPA's Gas Star program been adopted industry-wide?

A. The technologies are available, but they have not been adopted by the entire industry because of various barriers to implementation (corporate culture, operator resistance, no large financial upside), basically it is a matter of priorities.

Q. Does this conclude your rebuttal testimony?

A. Yes it does.

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