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May 2, 2025

U.S. DOT Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration (PHMSA)
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Re: Request for Written Regulatory Interpretation

Dear Director of Office of Standards and Rulemaking:

On behalf of Elk Petroleum, I am requesting a written interpretation regarding the applicability of certain 49 CFR Part 195 Pipeline Safety: Safety of Hazardous Liquid Pipelines regulations to company oil and gas pipeline operations utilizing Enhanced Oil Recovery (EOR) techniques in the Greater Aneth Field of the Rocky Mountains.

Elk Petroleum currently operates McElmo CO_2 Transmission Pipeline transporting ~98% liquid-phase, supercritical, carbon dioxide (CO_2), purchased from third-party providers, exclusively for EOR use in the Montezuma Creek, Utah area. McElmo CO_2 Pipeline which provides CO_2 to the downstream EOR system is subject to applicable Part 195 pipeline safety regulations.

A recent High Consequence Area (HCA) analysis determined that 3,669 ft (2.5%), of the McElmo CO_2 Pipeline's 146,788 ft (27.8 mi) total length could potentially affect an Unusually Sensitive Area (USA) consisting of two new drinking water wells. No other potential HCA impacts were identified along the entire pipeline length within the calculated 1,530 ft wide air-dispersion buffer. The liquid-phase CO_2 does not contain hydrogen sulfide (H_2S).

A CO_2 leak, in a liquid-only state, can only migrate less than 100 ft from the McElmo CO_2 Transmission Pipeline under worse-case conditions before changing to a gas-only state, so a leak cannot physically reach the two drinking water wells located over 1000 ft away. Additionally, released CO_2 in a gas-only state above ground, cannot indirectly impact drinking water sources, located approximately 500 feet below the surface.

Carbon Capture and Sequestration (CCS) facilities that inject liquid-phase CO_2 over 2,000 ft deep can have leaks that result in mixing CO_2 with aquifer waters resulting in contamination of drinking water through metal leaching, changing alkalinity, or saltwater intrusion. However, although the McElmo Transmission Pipeline delivers CO2 to an EOR facility, similar to that of a CCS facility, the transmission pipeline is merely several feet below

ground, where the water wells associated with the HCAs in question along the transmission pipeline route are perforated starting at approximately 500 feet below ground.

Based on the HCA analysis, McElmo CO_2 Transmission Pipeline could only leak liquid-phase CO_2 above ground, or several feet below ground, before changing to only gas-phase CO_2, so it cannot affect area drinking water sources, including the two nearby drinking water wells.

Studies have not shown significant harmful effects on people that drink water exposed to CO_2. Mild effects of drinking water exposed to CO_2 typically include irritation of the gastrointestinal tract leading to discomfort.

Since data collection began in 1988 and prior to the Satartia, Mississippi incident, there were no reported fatalities associated with a Part 195-regulated liquid-phase CO_2 pipeline failure within the U.S. and only one reported injury. Although the Satartia, Mississippi incident resulted in 45 individuals being hospitalized or injured with no fatalities, the injuries were a result of surface release. As the Satartia and previous incidents were surface releases, there have been no reported impacts on drinking water sources.

Based on Elk Petroleum's determination that a worse case CO_2 release from McElmo CO_2 Transmission Pipeline, in liquid-phase or gas-phase, cannot impact drinking water, we intend to justify the exclusion of the two drinking water wells resulting in no HCA impacts, excepting compliance with *§195.452 Pipeline Integrity Management in High Consequence Areas* regulations for these drinking water HCAs.

Elk Petroleum was unable to locate guidance from PHMSA on this specific subject, including the January 10, 2025 notice of public rulemaking (NPRM) *Pipeline Safety: Safety of Carbon Dioxide and Hazardous Liquid Pipelines*.

We are requesting PHMSA's written concurrence with our HCA analysis approach. If PHMSA disagrees with our approach, please provide additional direction so that McElmo CO_2 Transmission Pipeline can continue to be operated in compliance with applicable Part 195 regulations.

Thank you for your assistance.

Sincerely,

Jeff Roedell
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Figure 1: Example of Drinking Water Well Analysis Along Pipeline

cc:
Encl.