

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION COMMISSION**

**IN THE MATTER OF PROPOSED
AMENDMENT TO THE COMMISSION’S
RULES TO ADDRESS CHEMICAL DISCLOSURE AND
THE USE OF PERFLUOROALKYL AND
POLYFLUOROALKYL SUBSTANCES AND
IN OIL AND GAS EXTRACTION,
19.15.2, 19.15.7, 19.15.14, 19.15.16 AND 19.15.25 NMAC.**

CASE NO. 23580

**WILDEARTH GUARDIANS,
PETITIONER.**

**NEW ENERGY ECONOMY’S RESPONSE AND OBJECTION TO NEW MEXICO OIL
& GAS ASSOCIATION’S MOTION IN LIMINE TO EXCLUDE
THE EXPERT TECHNICAL TESTIMONY AND EXHIBITS
OF DR. KRISTEN HANSEN**

New Energy Economy responds as follows in opposition to the New Mexico Oil and Gas Association (“NMOGA”)’s Motion In Limine to exclude the technical testimony and exhibits of Kristen Hansen, Ph.D. before the Oil Conservation Commission (“Commission”).

1. In its Motion in Limine (hereinafter, “NMOGA Motion”) NMOGA argues that Dr. Hansen’s testimony does not meet the criteria for technical testimony as governed by Rule 19.15.3.7(B) because Dr. Hansen lacks what NMOGA claims is the requisite specialized technical expertise that is “material to this particular case” and therefore cannot provide testimony that is “probative and material to this particular case.” NMOGA Motion 2, 4.

2. NMOGA further argues that because Dr. Hansen, a Ph.D. chemist with deep familiarity with PFAS, doesn’t have particularized oil and gas experience, her testimony

regarding PFAS, its chemistry and the harms it inflicts on humans, animals and the environment should be excluded. *Id.* at 3. NMOGA states, contrary to Dr. Hansen’s actual testimony that: “She does not know nor appear to understand what, if any, PFAS substances are used in oil and gas operations, nor their environmental and health impacts.” *Id.* This is explicitly contradicted by Dr. Hansen’s direct technical testimony at New Energy Economy Hansen Direct at 11:

Q. Is it your understanding that a significant amount of produced water (PW) is brought to the land surface during oil and gas (O&G) exploration and production?

A. Yes.

Q. Does scientific evidence demonstrate that PW, also known as O&G fluid waste, from the Permian Basin, contain PFAS?

A. Yes.

Q. How do you know?

A. A peer-reviewed study [Jiang, 2022]¹ documented levels of several PFAS in produced water samples in the Permian Basin. Additionally, this study underscores the need to establish a comprehensive chemical characterization of PW to better understand environmental and human risk as well as plan for effective treatment of the PW and associated wastes.

Q. Given what you know about PFAS and how prevalent it is. Would you recommend stopping injection underground to eliminate a possible opportunity of even greater exposure?

A. All non-essential uses of PFAS should be phased out. The continual release of highly persistent PFAS will result in increasing concentrations and increasing probabilities of the occurrence of known and unknown health effects to human and the environment. Beyond the introduction of PFAS into the environment as a result of product use, the manufacture of PFAS compounds also results in continual PFAS additions to the environment in the form of industrial wastewater, industrial sludge and industrial air emissions.

¹ To emphasize this point, Dr. Hansen attaches the scientific peer-reviewed study that she cited in her Direct Technical Testimony and included in the *Journal of Hazardous Materials* as Exhibit KH-4 in her Rebuttal Technical Testimony.

3. NMOGA argues that because “[t]he purpose of the proposed rule is to prohibit the use of PFAS *specifically* in oil and gas hydraulic fracturing operations” Dr. Hansen’s testimony is therefore “different” and has no “relevance”. *Id.* at 4.

4. NMOGA concludes by arguing: Dr. Hansen lacks the requisite specialized technical expertise to provide admissible technical testimony, and her testimony is irrelevant under *all* applicable standards: 19.15.3.7(B); Rule 11-701(A); and New Mexico caselaw addressing the same.

5. NMOGA’s arguments are incorrect and misguided on both the facts and the law because:

- a. Relevant expert testimony is admissible, subject to the hearing officer’s determination of whether it should be admitted. *Anaya v. N.M. State Pers. Bd.*, 1988–NMCA–077, ¶ 13, 107 N.M. 622, 762 P.2d 909. The hearing officer should exercise her discretion in favor of admissibility because it is not only relevant, Dr. Hansen’s technical direct and rebuttal expert (and anticipated live) testimony address the heart of the matter at issue – the regulation of oil and gas in a “**manner as to prevent injury**” and “**protects public health, the environment and fresh water resources**” – especially given the guiding statutes that this Commission is required to follow.²

² Pursuant to NMSA 1978 §70-13-3² the Legislature gives OCD broad discretion to regulate produced water, and, the OCD “may make rules and orders,” explicitly pursuant to NMSA 1978 §70-2-12(B) (7) (“to require wells to be drilled, operated and produced **in such manner as to prevent injury**[.]”, §70-2-12(B) (15) (“to regulate the disposition, handling, transport, storage, recycling, treatment and disposal of produced water during, or for reuse in, the exploration, drilling, production, treatment or refinement of oil or gas, including disposal by injection pursuant to authority delegated under the federal Safe Drinking Water Act, **in a manner that protects public health, the environment and fresh water resources**”), §70-2-12(B) (21) (“**to regulate the disposition of nondomestic wastes** resulting from the exploration, development, production or storage of crude oil or natural gas **to protect public health and the**

b. Dr. Hansen’s testimony is supported by legally competent evidence and she justifies its admission:

- i. Ms. Hansen is a Ph.D. chemist who is *particularly* familiar with PFAS and has written peer-reviewed scientific papers on that topic. *See*, Dr. Hansen’s direct testimony and Exhibit KH-1.³ *See also*, Dr. Hansen’s rebuttal testimony at 8-9. (“My work tracking PFAS compounds in the environment has been cited thousands of times in the peer-reviewed scientific literature.”)
- ii. Dr. Hansen “support[s] a ban on *Perfluoroalkyl* and *polyfluoroalkyl substances* or *PFAS*, defined as: a class of compounds including chemicals with at least one aliphatic perfluorocarbon moiety (-C_n-F_{2n}-).”⁴
- iii. The class of PFAS is estimated to include > 14,000 compounds, many of which have not been identified, much less fully characterized. There are well-characterized PFAS compounds: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), perfluorobutane sulfonic acid (PFBS), perfluorononanoic acid (PFNA) and hexafluoropropylene oxide dimer acid (HPFO-DA or Gen X). These well-characterized PFAS span a range of chemistries and are therefore reasonable surrogates for the thousands of under-studied/unstudied members of the class in considering environmental mobility and toxicity to humans.

environment”) and §70-2-12(B) (22) (“**to regulate the disposition of nondomestic wastes** resulting from the oil field service industry, the transportation of crude oil or natural gas, the treatment of natural gas or the refinement of crude oil **to protect public health and the environment[.]**”) (Emphasis supplied.)

³ New Energy Economy Direct, 10/21/2024, Hansen, at 1-4, and KH-1.

⁴ *Id.*, at 6, 9, 10.

These six well-characterized PFAS are the basis for EPA’s April 2024 rule concerning maximum contaminant levels (MCLs) of PFAS in drinking water. Although other members of the PFAS class are not well studied, emerging evidence suggests potential similarities in toxicity for many members of the class. Emerging evidence also suggests the potential for additive toxicity amongst different members of the class. That is, exposure to more than one PFAS may result in health effects greater than exposure to a single PFAS alone [Conley, 2022]. It is to accommodate the potential for additive toxicity that EPA defined a Health Index (HI) component of the MCL: a limit based on a combination of up to 4 PFAS (PFHxS, PFBS, PFNA, HPFO-DA). Despite the number of different PFAS, there are several characteristics that apply to all, most or many PFAS:

- The vast majority of PFAS are xenobiotic (human made) and are not found in nature. The vast majority of PFAS include some molecular component that is persistent in the environment (> 10 years), resisting breakdown by bacteria, hydrolysis, or photolysis. Thus, the moniker for PFAS as “forever chemicals”.
- The vast majority of the perfluoro components of PFAS are not destroyed in conventional water treatment processes.

Of the well-studied PFAS compounds, all but one (HPFO-DA) bioaccumulate in humans with half-lives ranging from between several weeks (PFBS) to several years (PFOA, PFOS, PFHxS, PFNA).

- According to the CDC’s Agency for Toxic Substances and Disease Registry the well- studied PFAS compounds all are linked to one or several health effects in humans including cancer, developmental toxicity, endocrine disruption, cardiovascular disease, immune system toxicity and liver toxicity.

Pathways of human exposure to PFAS include gestation (via placenta), ingestion (including via breast milk, drinking water and food), inhalation and dermal adsorption. [Sunderland, 2019]⁵

- iv. Under the liberal admissibility standard of “relevance” Dr. Hansen’s testimony is appropriate and will be given the proper weight by the Commission. 19.15.3. 12 B. (2) NMAC (“The commission shall admit relevant evidence[.]”)
- v. The focal point for judicial review of an administrative record must include “factors considered by the agency, ...where necessary for background information or for determining whether *the agency considered all relevant factors including evidence contrary to the agency’s position,*... or where necessary to explain technical terms or complex subject matter involved in the action[.]” *Cross-Valiant Cellular P’ship v. United States Dep’t of Agric.*, 2021 U.S. Dist. LEXIS 139593, *4-5. (internal citations omitted.) (emphasis supplied.) An agency record is deficient if the agency ignored relevant factors it should have considered in making its decision. *Id.* This Commission will not

⁵ *Id.*, at 6-7.

have “all relevant factors including evidence contrary to the agency’s position” if it doesn’t consider the scope and frequency of the issue at hand. *See*, in particular, Dr. Hansen’s rebuttal where she responds to the definition of PFAS proposed by OCD and NMOGA’s experts, at 1-8. Dr. Hansen’s extensive knowledge about PFAS is the particularly relevant factor here, not whether she is familiar with oil & gas operations. She knows about and can testify about PFAS chemical components, the persistence of it in nature, the harm it can cause, **the reason why it should be banned, and the reason why the Commission should require disclosure of all chemical constituents is to prevent further harm – to disrupt the pathways into the air (via flaring) and into hydraulic fracturing processes so as not to further contaminate and poison watercourses (via spills from produce water, also known as toxic radioactive fracking waste) or nondomestic waste.**

See, Enoah v. New Mexico Human Servs. Dep’t, No. 33,421, 2015 WL 1682638, at *3 (N.M. Ct. App. Mar. 18, 2015) Any error in failing to strike duplicative evidence is harmless. *See Milligan v. Thompson*, 110 Wash.App. 628, 634–35, 42 P.3d 418 (2002) (noting that any error in failing to strike repetitive evidence is harmless); *Hunter v. Regence Blue Shield*, 134 Wash. App. 1045 (2006)

- vi. The presiding officer has wide latitude to consider evidence, and is not constrained by the rules of evidence used by the trial courts. Like the New Mexico Public Regulation Commission (“PRC”) the Hearing Examiner noted in NM PRC Case No. 13-00390-UT, “the Commission’s rules of evidence

emphasize the importance of admitting ‘all relevant evidence.’” 13-00390-UT, *Order Partially Denying Objections and Motions to Strike of New Mexico Industrial Energy Consumers and the New Mexico Attorney General*, December 19, 2014, at 6. This is the “primary purpose” of the Commission’s evidentiary rules, which “are not intended to be restrictive. *Id.* Administrative agencies may consider evidence that would not be admissible under the rules of evidence, doubts regarding admissibility should be resolved in favor admission. *See*, NM PRC Case No. 17-00129-UT, *Hearing Examiner’s Order Granting in Part and Denying in Part PNM’s Motion to Strike Sections of Muller Direct Testimony*, at 6. (Sept. 14, 2017).

- vii. This is a hearing before a Hearing Officer and Commission. It is not a jury trial. Parties will not suffer any prejudice from having the Hearing Officer and Commission hear Dr. Hansen’s testimony and examine the documentary evidence and the testimony she relied upon in formulating her expert testimony. While there can be no question that Dr. Hansen’s testimony regarding PFAS chemistry and toxicity is relevant evidence in a hearing on whether its use should be banned, even if her testimony were about something that bore no relationship to the matters before this Commission, its admission would be harmless. *State v. Hernandez* 1999-NMCA-105, ¶ 22, 987 P.2d 1156 (“We presume that a judge is able to properly weigh the evidence, and thus the erroneous admission of evidence in a bench trial is harmless unless it appears that the judge must have relied upon the improper evidence in rendering a decision.”) *Nez v. Gallup-McKinley Pub. Sch.*, No. 31,728, 2014

WL 1314937, at *3 (N.M. Ct. App. Feb. 17, 2014) (“We presume that a judge is able to properly weigh the evidence, and thus the erroneous admission of evidence in a bench trial is harmless unless it appears that the judge must have relied upon the improper evidence in rendering a decision.”) *Accord, Cain v. C. I. R.*, 460 F.2d 1243, 1244 (5th Cir. 1972); *Adams v. Erickson*, 394 F.2d 171, 173 (10th Cir. 1968).

- viii. Parties can address their concerns with this testimony through cross-examination at the hearing. 19.15.3. 12 B. (3) NMAC.

6. The evidence that NMOGA seeks to strike will aid the Hearing Officer and Commission in making a decision about whether the proposed rule amendments are in the public interest and based on substantial evidence. The facts and the context of information in the testimony of New Energy Economy’s Dr. Hansen include, in addition to what is already stated above, and needs no repetition:

- a. New Mexicans deserve at least the same protections as Coloradoans and Californians, whose states have banned PFAS and require chemical disclosure. Companies can reveal the fracking chemicals injected into each well without the trade names of the products used - the same way food producers disclose individual ingredients while keeping their recipes secret.⁶

⁶ New Energy Economy Direct, 10/21/2024, Hansen, at 13-14, and KH-3; *State v. Zinke*, 871 F.3d 1133 (10th Cir. 2017); <https://martenlaw.com/news/state-action-on-pfas-expands-with-bans-labeling-and-reporting-requirements>; <https://www.alston.com/en/insights/publications/2024/04/cos-prepare-for-ca-legislation-that-would-ban-pfas>.

7. The gravity of the contamination and how pollution is or is not controlled is evidence at issue and is well within the authority of the agency to weigh.⁷ 19.15.3.3 NMAC. In order for this agency to make a judgment that withstands the scrutiny of appeal, changes in rules must be tethered to the facts that are reasonably and rationally related to the cause for those rule changes. *Phelps Dodge Tyrone, Inc. v. N.M. Water Quality Control Comm'n (Phelps Dodge)*, 2006-NMCA-115, ¶ 10, 140 N.M. 464, 143 P.3d 502, citing, *Regents of the Univ. of Cal.*, 2004-NMCA-073, ¶ 35, 136 N.M. 45, 94 P.3d 788 (internal quotation marks and citations omitted). (“An action is arbitrary or capricious if it is unreasonable, irrational, wilful, and does not result from a sifting process” or “if there is no rational connection between the facts found and the choices made.”). It would be arbitrary and capricious of an agency to exclude expert evidence in a case such as this, where the evidence is undoubtedly reliable and directly addresses the toxicity and impacts of the chemicals whose uses are at issue.

8. NMOGA’s citation of *State v. Alberico* at 2-4 supports New Energy Economy’s (and WildEarth Guardian’s) position not theirs. The Hansen testimony is relevant, probative in the specialized field at issue, PFAS, and competent and therefore should be admitted. “[T]he issue is focused on what is competent evidence, not whether there is a substantial basis for the admission of expert opinion testimony.” *State v. Alberico*, 116 N.M. 156, 164, 861 P.2d 192, 200 (1993)

9. NMOGA, at 2, and New Energy Economy agree that this is the state of the law regarding the admissibility of technical testimony:

The admissibility of technical testimony in Commission rulemaking proceedings is governed by Rule 19.15.3.7(B) NMAC. 19.15.3.7(B) defines technical testimony as: “[s]cientific, engineering, economic, or other specialized testimony, but does not include legal argument, general comments, or statements of policy or position concerning matters

⁷ New Energy Economy Rebuttal, 11/4/2024, Hansen, at 9-10 and KH-4.

at issue in the hearing.” Rule 19.15.3.7(B) NMAC. To qualify as technical testimony, the testimony must be provided by an individual with specialized knowledge, skill, experience, training, or education in a relevant technical field, offering expert insights beyond general observations or publicly accessible information. *See* Rule 11-701(A); *see also State v. Smith*, 2024-NMCA-068, ¶13 (“Expert testimony ‘is neither the kind of personal observation that a lay person is capable of making nor common knowledge within the general public’”)(internal citations omitted); *accord State v. Duran*, 2015-NMCA-015, ¶ 16, 343 P.3d 207 (“Information not known by the general public includes ‘[k]nowledge contained in treatises and understood by practitioners in their particular field, as well as knowledge that is beyond personal observation’ and ‘a product of . . . specialized training and experience not possessed by the average person’”)(internal citations omitted).

Dr. Hansen’s technical expert testimony meets all the above criteria: requisite educational and professional experience, specialized knowledge about PFAS and its properties and characteristics, including, but not limited in oil and gas operations (ie., “My PFAS expertise is especially germane given that these compounds are both highly persistent and highly mobile in the environment, typically moving quickly and widely from their point of use, discharge or disposal. With the potential for PFAS spills on the ground or in water ways, volatilization of incompletely combusted PFAS during flare off, volatilization of PFAS from surface ponds, spills or discharge of produced water and the presence of PFAS on and from surfaces and machinery encountered during transport, use and disposal, my experience with environmental analysis is far more relevant than industry-specific knowledge.” Hansen Rebuttal at 9.) Additionally, it is beyond doubt that Dr. Hansen’s testimony offers expert insights beyond general observations and is far beyond what a layperson or someone in the general public knows and this is apparent in her thoroughly cited Direct and Rebuttal written testimonies.

WHEREFORE because Dr. Hansen’s testimony is relevant, probative and is specialized to the matters at issue, under *all* applicable standards: 19.15.3.7(B); Rule 11-701(A); and New

Mexico caselaw addressing the same, New Energy Economy prays that this Hearing Officer will deny NMOGA's meritless motion to exclude Dr. Hansen's testimony.

Respectfully submitted this 4th day of November, 2024,

NEW ENERGY ECONOMY

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WILDEARTH GUARDIANS,

Petitioner.

CASE NO. 23580

CERTIFICATE OF SERVICE

I hereby certify that on November 4, 2024, a copy of the foregoing:

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