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Introduction to the Summer 2011 NREEL Newsletter

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This edition of the *NREEL Vista Newsletter* features three articles from UNM law students and three articles from New Mexico lawyers.

Two articles discuss the outcome of the 2011 legislative session, beginning with Stephen Marshall's 2011 update from the Roundhouse. Later in the issue, Aaron Martin forecasts the efficacy of a newly enacted statute aimed at increasing available hunting tags for New Mexico residents.

Two articles address energy production and its potential effect on water quality in New Mexico. Monica Moya frames the current debate surrounding hydraulic fracturing: can "fracking" facilitate natural gas production without endangering the quality of our groundwater? Ana Romero Jurisson summarizes a recent Tenth Circuit opinion upholding a permit to mine uranium, *Morris v. Nuclear Regulatory*

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2011 Legislative Update

Stephen R. Marshall *

Environmentalists in New Mexico were understandably nervous as the 2011 legislative session began this past January. Before the session started, newly-elected Governor Susana Martinez had proposed significant cuts to the budgets of the State's environmental departments and had appointed a self-proclaimed global warming skeptic as her Energy, Minerals and Natural Resources Department ("EMNRD") secretary.[1] Needless to say, these actions primed environmentalists to be wary of the Governor's environmental agenda for the approaching session.

Whether these fears of environmentalists were founded, there were a number of environmental bills proposed this session of particular interest to the legal community. This article provides a summary of that legislation and focuses on two bills—one that would have significantly changed the process of appealing decisions made by the State Engineer to the district court and another that would have completely reorganized the State's administrative hearing process.

I. House Bill 109 (HB 109) - Appeal State Engineer Decisions in Court

HB 109 proposed to amend Section 72-2-16 NMSA 1978 of the Water Code. It would have given applicants for water permits the opportunity to appeal initial, sans-hearing, State Engineer decisions on their applications directly to the district court without having to go through the State Engineer's administrative hearing process.[2]

Supporters of the bill lauded it as a "sensible option to reduce the unnecessary expense of a hearing in an unprotested case where the likely outcome is an appeal to district court anyways."[3]

However, the Office of the State Engineer ("OSE") opposed the bill based

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on concerns that the administrative process helps frame the issues and flesh out the record for the district court.[4] Indeed, the OSE stated that the administrative process "allows for the expertise of the State Engineer to be addressed to the application and for a thorough administrative record to be developed for de novo review in a district court appeal of a final State Engineer decision."[5] The OSE argued that without an administrative record, the district courts would be "at a disadvantage in understanding the technically complex factual issues that arise during administrative hearings on aggrieved applications."[6]

The OSE also expressed concern that the courts would be unable to determine whether they had jurisdiction over the issues in the appeal. This concern arose from the New Mexico Supreme Court's decision in *Lion's Gate*, which was recently granted rehearing, wherein the Court had held that a district court's appellate jurisdiction is limited to those issues heard by the OSE.[7] The OSE stated that "[w]ithout an administrative record, it would be very difficult for a court to identify the issues considered by the water rights division in initially acting upon an application."[8]

Finally, the OSE pointed out that, if HB 109 passed, it would be vulnerable to constitutional challenges. In *Fellows v. Shultz*,[9] the Court held that a similar amendment to the water code, which would have allowed aggrieved applicants for State Engineer permits to directly appeal the OSE's denial of their application to the district court, was unconstitutional because it violated separation of powers by delegating duties of the executive branch to the judicial branch. Relying on *Fellows*, the OSE asserted that HB 109 would face similar judicial challenges.[10]

Despite OSE's concerns, HB 109 passed the House with a vote of 63 - 5. Nevertheless, the bill eventually died in the Senate Judiciary Committee.

II. Senate Rules Committee Substitute For Senate Bills 67 & 104 (SB 67/104) - Administrative Hearings Act

SB 67/104 proposed to create the "Administrative Hearings Office" ("AHO"), which would be administratively attached to the Attorney General's Office.[11] The purpose of the AHO was to "consolidate hearing officers and hearing functions of all executive agencies as a single function of government."[12] Pursuant to that purpose, all existing hearing officers, hearing examiners, support staff, and appropriations were to be transferred from State executive agencies to the AHO upon creation of the new office.[13]

SB 67/104 drew criticism from a number of environmental agencies. The EMNRD noted that although the bill was intended to have a neutral impact on costs for administrative hearings, the bill may result in additional costs to the Oil Conservation Division ("OCD"). The OCD's hearing examiners have duties outside of administrative hearings, and, accordingly, the OCD would have to spend extra money to hire new personnel to perform those duties if its hearing examiners were transferred to the AHO.[14]

The bill also drew criticism from the OCD itself. The OCD's main concern was that SB 67/104 would potentially sacrifice hearing officer expertise.[15] This concern stemmed from the fact that, although SB 104 would give "preference to hearing officers subject matter expertise" when assigning officers to cases, the officers were to be drawn from a collective pool.[16]

The OCD feared that drawing from a collective pool would potentially create situations wherein the only officers available would be those without subject matter expertise, which would mean that sometimes examiners might "be assigned to matters about which they [knew] nothing."[17] This was a justifiable fear given that the subject matter of OCD cases "involve arcane issues of petroleum geology, engineering, or environmental science," and are traditionally heard by petroleum engineers hired on as hearing examiners.[18]

Perhaps due to overwhelming agency criticism of the bill, after the Senate Rules Committee substituted SB 67/104 it failed to move through any other committee and was not put to a vote on the Senate floor.

III. List of other relevant legislation

A. Bills that passed

HB 40 (Trujillo & Ulibarri)

Title: Abandoned Mine Reclamation Act Jurisdiction

Purpose: Amends the Abandoned Mine Reclamation Act to bring it into conformance with changes to the federal Surface Mine Control and Reclamation Act of 1977, as amended.[19]

HB 301 (Martinez)

Title: Create New Mexico Unit Fund

Purpose: Establishes the "New Mexico Unit Fund." The NM Unit Fund will receive and account for federal payments that the State will receive under the federal Arizona Water Settlements Act of 2004 ("AWSA"). Under the AWSA, the State will receive at least $66 million for the purpose of developing water in the Gila River Basin and an additional $62 million if the State constructs a New Mexico Unit of the Central Arizona Project.[20]

HB 402 (Gonzales)

Title: Status of Water Rights Under Lease

Purpose: The substitute for this bill amends Section 72-6-3 NMSA 1978 to explicitly set forth that the beneficial use of water pursuant to a State Engineer approved lease of valid existing water rights constitutes the continued exercise of the leased water rights. The amendment also protects those water rights from partial loss through forfeiture or abandonment to the extent the rights have been leased.[21] HB 402 was pocket vetoed by the Governor.[22]

HOUSE ENERGY AND NATURAL RESOURCES COMMITTEE SUBSTITUTE FOR HB 452

Title: Natural Gas Shut-Down Task Force

Purpose: Creates the Natural Gas Emergency Task Force, enumerates its powers, describes the composition of its members, requires reporting the results to the appropriate government officials, and appropriates fifty thousand dollars to fund the task force activities.[23]

B. Bills That Did Not Pass

HB 46 (Bandy)/SB 51 (Fischmann)

Title: Farmer Liability for Certain Products

Purpose: Would have protected farmers from liability to manufacturers of genetically engineered products in the event that those products inadvertently grew on the farmer's land.[24]

HB 80[25] (Bandy)

Title: Merge Game & Fish with EMNRD

Purpose: This bill would have dissolved the Game and Fish Department as a standalone entity and included it as a division of the EMNRD. The bill was controversial because it would also have eliminated the State Game Commission and transferred its duties to the Game and Fish Division. A major criticism of the bill was that it sought to eliminate the authority of the Environmental Improvement Board and the Water Quality Control Commission to enact regulations, which would have made both entities advisory.[26]

HB 111 (Lundstrom)

Title: Uranium Legacy Cleanup Act

Purpose: Sought to enact the "Uranium Legacy Cleanup Act" by in part amending and adding new material to the Tax Administration Act for the purposes of creating revenue sources to fund uranium legacy cleanup activities and establishing clear liability on uranium mining operations.[27]

HB 176 (Egolf)

Title: Oil & Gas Act Enforcement

Purpose: Would have increased penalties for violations of the New Mexico Oil and Gas Act and the Geothermal Resources Conservation Act[28] and allowed the State to regulate oil and gas production to protect public health and water resources.[29]

HB 177 (Egolf)

Title: Recovery of Damages for Injury to Resources

Purpose: Would have allowed the State to recover damages for injury to publicly owned natural resources resulting from the release of injurious substances into the environment that are not in compliance with a license or permit issued by the state or federal government that is in effect at the time of the release.[30]

HB 178 (Egolf)
Title: Denial of Air Quality Control Permits
Purpose: Sought to provide authority to the Environment Department or the local agency that administers the Air Quality Control Act to deny an air quality permit application or revoke an existing air quality permit under certain circumstances outlined in the act.[31]

HB 578 (Gentry)
Title: Adjudicated Water Right Use Without Diversion
Purpose: Would have allowed the State Engineer to authorize the use of adjudicated water rights without diversion, i.e., instream flows. The bill would allow an owner of an adjudicated water right to file an application for a change in point of diversion, purpose or place of use of a water right, which could then be used for recreational, fish or wildlife or other ecological purposes without diversion if its use would not impair the use of other water right holders and was not contrary to water conservation or the public welfare.[32]

HB 579 (Taylor)
Title: Regulate Greenhouse Gas Emission Requirements
Purpose: Sought to preclude the environmental improvement board (EIB), a local board, any state agency, board, institution or political subdivision from adopting or enforcing any state, local or regional rule or program to regulate the emission of greenhouse gas except as provided in the Air Quality Control Act.[33]

SB 59 (Harden)
Title: Ownership of Pore Space
Purpose: Would have defined ownership rights in subsurface pore space that can be used for storage of gasses or liquids. The bill expressly bestowed the property rights in the pore space to the surface owner unless the rights had been separated from surface ownership by express agreement.[34]

SB 366 (Papen)
Title: Single Duty of Water Within One District
Purpose: Proposed to amend Section 72-4-19 NMSA 1978 by adding a new subsection requiring that stream adjudication decrees specify a single duty of water for all irrigated crops within established irrigation or conservancy districts.[35]

SB 376 (Cisneros)
Title: State's Share of Water Rights Settlements
Purpose: The substitute for this bill would have amended the severance tax bonding act to temporarily allocate six percent of annual senior severance tax bonding capacity to fund the State's share of Indian water rights settlements authorized by federal law. The bonds were to be issued in the same manner and be subject to the same restrictions as other severance tax bonds. Any remaining funds following the final disbursement from the water rights settlement fund would have reverted to the severance tax bonding fund.[36]

SB 489 (Harden)
Title: Greenhouse Gas Emission Rule Stringency
Purpose: Sought to amend the Air Quality Control Act to prevent the Environmental Improvement Board or a local board from adopting a rule more stringent than federal law or regulation for reporting, verifying, limiting, trading or capping the emission of greenhouse gases.[37]

(Endnotes)

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[1] Steve Terrel, *Martinez's first legislative session promises to be a hard-work 'honeymoon'*, Santa Fe New Mexican, (Jan. 17, 2011), http://www.santafenewmexican.com/local%20news/2011-Legislature-Hard-work--honeymoon-.

[2] HB 109, 50th leg., 1st sess. (N.M. 2011), *available at* http://www.nmlegis.gov/lcs/_session.aspx?Chamber=H&LegType=B&LegNo=109&year=11.

[3] *2011 Legislative Priorities*, Conservation Voters New Mexico, http://www.cvnm.org (last visited Mar. 23, 2011). *See Lion's Gate Water v. D'Antonio,* 2009-NMSC-057, ¶¶ 7, 10, 147 N.M. 523, 226 P.3d 622 ("*Lion's Gate*") (noting that the district court had correctly held that the applicant must go through the State Engineer administrative hearing process prior to appealing to district court regardless of the State Engineer's determination that the application should be denied because of the lack of unappropriated water in the basin).

[4] *See* Fiscal Impact Report for HB 109, *available at* http://www.nmlegis.gov/lcs/_session.aspx?Chamber=H&LegType=B&LegNo=109&year=11.

[5] *Id.*

[6] *Id.*

[7] *Id.*

[8] *Id.*

[9] 81 N.M. 496, 469 P.2d 141 (1970).

[10] *See* Fiscal Impact Report for HB 109, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0109.pdf.

[11] *See* Fiscal Impact Report for SB 104, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0104.pdf.

[12] *Id.*

[13] *Id.*

[14] *Id.*

[15] *Id.* The Office of the State Engineer shared this concern.

[16] *Id.*

[17] *Id.*

[18] *Id.*

9 *See* Fiscal Impact Report for HB 40, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0040.pdf.

[20] *See* Fiscal Impact Report for HB 301, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0301.pdf.

[21] *See* Fiscal Impact Report for HB 402, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0402.pdf.

[22] For a history of HB 402, visit: http://www.nmlegis.gov/lcs/_session.aspx?Chamber=H&LegType=B&LegNo=402&year=11.

[23] *See* Fiscal Impact Report for HB 452, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0452.pdf.

[24] *See* Fiscal Impact Report for HB 46, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0046.pdf. A similar bill, SB 384 (Fischmann), did not pass either. SB 384 contained similar provisions, but did not hold a manufacturer liable for public nuisance.

[25] HB 84 was a similar bill that did not pass. The bill differed from HB 80 in that it would have combined the New Mexico Environment Department with the EMNRD.

[26] *See* Fiscal Impact Report for HB 80, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0080.pdf.

[27] *See* Fiscal Impact Report for HB 111, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0111.pdf.

[28] *See* Fiscal Impact Report for HB 176, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0176.pdf.

[29] *2011 Legislative Priorities*, Conservation Voters New Mexico, http://www.cvnm.org (last visited Mar. 23, 2011).

[30] *See* Fiscal Impact Report for HB 177, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0177.pdf.

[31] *See* Fiscal Impact Report for HB 178, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0178.pdf.

[32] *See* Fiscal Impact Report for HB 578, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0578.pdf.

[33] *See* Fiscal Impact Report for HB 579, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/HB0579.pdf.

[34] *See* Fiscal Impact Report for SB 59, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/SB0059.pdf.

[35] *See* Fiscal Impact Report for SB 366, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/SB0366.pdf.

[36] *See* Fiscal Impact Report for SB 376, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/SB0376.pdf.

[37] *See* Fiscal Impact Report for SB 489, *available at* http://www.nmlegis.gov/Sessions/11%20Regular/firs/SB0489.pdf.

Would You Rather Have Warm Homes or Clean Water?

The Implications of Hydraulic Fracturing in New Mexico

*Monica Moya**

The importance of natural gas came into sharp focus for many New Mexicans on February 3, 2011, when Governor Martinez declared a State of Emergency "in response to extreme cold weather and natural gas outages across the state."[1] Thousands in Taos and Española spent several days without heat because "the state was hit with a double punch of reduced gas supplies and increased demand caused by record cold."[2] The recent gas shortage is ironic, considering that New Mexico is the fifth largest producer of on-shore natural gas in the United States.[3]

Given the significance of natural gas to New Mexico, it is important to understand the implications of the production process. This article discusses the legal and public health issues raised by hydraulic fracturing, a process used by gas producers to extract natural gas from underground rock formations.[4]

Hydraulic Fracturing

Natural gas collection can be stimulated using a process known as hydraulic fracturing or fracking.[5] To conduct fracking, producers drill underground wells and inject pressurized fluids into geologic formations thousands of feet below the surface and water table to crack the rock and release natural gas.[6] The injected fluids contain a mixture of water, sand, and chemicals.[7] To keep the fractures open, a "propping agent," a mixture containing sand or ceramic beads, is pumped into the fractures.[8] The injected fluids flow back to the surface and natural gas seeps from pores into the well for later extraction.[9] The recovered fluid is stored in pits on the surface.[10] That waste fluid can be treated, disposed, or reused in another fracking well.[11]

While the natural gas obtained from fracking is essential to providing energy in New Mexico, many have questioned its safety because of the possibility of groundwater contamination from the chemicals used in the fracking fluids.[12] The EPA describes five possible "pathways" through which fracking may contaminate groundwater.[13] First, faulty well construction can cause leaks in the well casing and allow fluid to escape.[14] Second, surrounding wells may not be able to withstand the high pressures of the injection site, which could to lead to contamination through the surrounding well.[15] Third, since confining beds are built around sources of groundwater, there may be faults or fractures in the confining beds, which could allow fluids to seep into the water.[16] Fourth, fluids can be injected into or above the groundwater.[17] Finally, fluids may be displaced from the injection zone into groundwater if they are hydraulically connected.[18]

Regulation of Hydraulic Fracturing in New Mexico

In 1974, Congress passed the Safe Water Drinking Act (SWDA) that granted the EPA authority to regulate drinking water in the United States.[19] Because of the potential for water contamination by fracking, the SWDA includes "underground injection control" provisions that regulate injection wells, the fluids used in injection processes, and the disposal of the fluids.[20] The SWDA also allows the EPA to delegate "primary" enforcement authority to states that meet certain criteria.[21]

The EPA granted New Mexico primary authority over underground injection in 1982.[22] Along with the authority from the EPA and the SWDA, New Mexico regulates underground injection through the Oil and Gas Act (OGA)[23] and the Water Quality Act (WQA).[24] These Acts delegate regulatory and enforcement authority to the Oil Conservation Division (OCD) of the New Mexico Energy, Mineral and Natural Resources Department; the Oil Conservation Commission (OCC); and the Water Quality Control Commission (WQCC).[25] The OCC and WQCC have a number of rules in the New Mexico Administrative Code,[26] but the OCD is the main regulatory and enforcement authority.[27] The OCD has an Underground

Injection Control program for all injection wells that are related to oil and natural gas production within New Mexico.[28]

The OCD has a number of requirements that gas companies must follow in order to construct wells in New Mexico. First, the OCD reviews applications for injection wells to ensure that the plans meet all requirements.[29] In reviewing the plans, the OCD also looks at the suggested location of the new well in relation to existing wells.[30] After the OCD approves a well permit, the OCD has a number of protective requirements that cover the construction and siting, monitoring and testing, and recordkeeping and reporting of the wells.[31] These protective requirements provide construction standards in order to prevent water contamination through any of the pathways described by the EPA.[32] After the wells are constructed, they are monitored and undergo periodic mechanical integrity tests to make sure that the wells remain in operational condition.[33] Operators are required to report data to the OCD and have plans for the safe plugging or abandoning of unsafe wells.[34]

The OCD also has a number of regulations governing the storage and disposal of wastes. In 2008, Rule 19.15.17 NMAC was amended to require stricter standards for wastes storage and disposal.[35] These "Pit Rules" require operators to "design and construct a pit, closed-loop system, below-grade tank or sump to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment."[36] Pits must be fenced in and netted to prevent exposure to wildlife.[37] Significantly, the Pit Rule amendment requires linings that will prevent wastes stored in the pits from contaminating the groundwater.[38] In order to receive a drilling permit from the OCD, operators must comply with the Pit Rules as well as the drilling requirements.

According to Steve Henke, President of the New Mexico Oil and Gas Association (NMOGA), NMOGA members comply with OCD and all other regulations when drilling for natural gas in New Mexico.[39] He explained that because resources are developed several thousand feet below potable groundwater with several layers of pipe and cement protecting the water the "opportunity for contamination is minimal."[40] As a result of compliance with OCD, OCC, and WQCC regulations, fracking has been a successful method for harvesting natural gas and has not directly caused any groundwater contamination in New Mexico.[41]

While the fracking process itself may not be dangerous, opponents have alleged many instances of groundwater contamination from waste storage pits. In fact, there have been over 700 reported incidents of groundwater contamination from oil and gas facilities in New Mexico.[42] Faulty pits have been blamed for more than half of the incidents.[43] Most groundwater contamination occurs between 0 and 1 foot deep, which means that the problems occur on or near the surface.[44] Wastes can seep into surrounding soil, potentially sterilizing the soil, preventing vegetation growth, or poisoning wildlife.[45] In fact, ranchers and agency personnel have discovered dead cattle and birds near noncompliant pits.[46] To remediate issues like these and prevent future problems, the OCD passed the previously discussed Pit Rules.

Not everyone is happy with the new Pit Rules, however. Oil and gas producers have filed a lawsuit claiming that the OCD has overstepped its authority by applying groundwater standards to pit waste, thereby imposing an unfair economic burden on the industry.[47] The industry is concerned that the stricter standards will cause drilling costs to rise and deter producers from drilling in New Mexico.[48] The former director of the OCD has stated that producers are exaggerating the costs of compliance and that "the cost a company will have to pay in fines, lawsuits and environmental clean-up from waste disposal is far higher than cost of compliance."[49] Because of the potential statewide impact of the case, New Mexico District Court Judge Barbara J. Vigil recently certified the case to the New Mexico Court of Appeals where it is currently pending.[50]

Conclusion

New Mexico's economy and citizens depend on local natural gas production, but production cannot come at the expense of contamination to groundwater. Cooperation between environmental advocates and industry producers is essential for the continued use of hydraulic fracturing. As a speaker at the Department of Interior's Forum on the Best Hydraulic Fracturing Practices stated: "If Americans are to realize full potential of our nation's plentiful, affordable and environmentally advantaged natural gas resources, increased access to these resources will be essential. We believe expanded access can be fully consistent with the other priorities of protection of the ecosystems and protection of natural land."[51] In other words, hydraulic fracturing practices should not force New Mexicans to choose between having warm homes or clean water.

(Endnotes)

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[1] Press Release, State of N.M. Office of the Governor, Governor Susana Martinez Signs Exec. Orders, Asks New Mexicans to Take Certain Steps in Response to Extreme Cold Weather, Natural Gas Outages (Feb. 3, 2011), http://www.governor.state.nm.us/uploads/PressReleases/110203_1.pdf.

[2] Astrid Galvan & Phil Parker, *Natural Gas Being Restored—Execs Hope Service will Return Today*, Albuquerque Journal, Feb. 6, 2011, at B1.
[3] *Id.*
[4] *Hydraulic Fracturing*, Environmental Protection Agency (Last updated Mar. 30, 2011), http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/.
[5] Marcilynn Burke, Deputy Dir., Bureau of Land Mgmt., Address at Dept. of Interior Forum on Best Hydraulic Fracturing Practices 9 (Nov. 30, 2010) (transcript available at http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=79514).
[6] *Hydraulic Fracturing Research Study*, Environmental Protection Agency (June 2010), http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf; *see also Hydraulic Fracturing*, ProPublica.org (2011), http://www.propublica.org/special/hydraulic-fracturing-national (diagramming hydraulic fracturing).
[7] *Id.*
[8] *Id.*
[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] *Hydraulic Fracturing Research Study*, Environmental Protection Agency (June 2010), http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf. *See also Hydraulic Fracturing*, Environmental Protection Agency (Last updated March 30, 2011) http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm (explaining the EPA's plan to evaluate "the full lifespan of water in hydraulic fracturing, from acquisition of the water, through the mixing of chemicals and actual fracturing, to the post-fracturing stage, including the management of flowback and produced water and its ultimate treatment and disposal.").
[13] *Protecting Drinking Water Through Underground Injection Control*, Environmental Protection Agency 9-10 (Jan. 2002), http://www.emnrd.state.nm.us/ocd/documents/EPA-pocketguide_uic_protectng_dw_thru_uic.pdf.
[14] *Id.*
[15] *Id.*
[16] *Id.*
[17] *Id.*
[18] *Id.*
[19] Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j (2006).
[20] 42 U.S.C. § 300h-3 (2006).
[21] *Underground Injection Control Program Manual, supra* note 9, at 7.
[22] *Id.*
[23] N.M. Stat. Ann. §§ 70-2-1 to -38 (1978).
[24] N.M. Stat. Ann. §§ 74-6-1 to -17 (1978).
[25] *Underground Injection Control Program Manual*, *supra* note 9, at 7.
[26] N.M. Admin. Code §§19.15.1 to -111; N.M. Admin. Code §§ 20.6.1 to -3.
[27] *Underground Injection Control Program Manual*, *supra* note 9, at 7.
[28] *Id.*
[29] *Id.* at 9.
[30] Telephone Interview with Steve Henke, President, N.M. Oil & Gas Ass'n (Mar. 23, 2011).
[31] *Protecting Drinking Water Through Underground Injection Control*, *supra* note 17, at 13-14.
[32] *Id.*
[33] *Id.*
[34] *Id.*
[35] N.M. Admin. Code §19.15.17.
[36] N.M. Admin. Code §19.15.17.11.A.
[37] N.M. Admin. Code §§19.15.17.D to –E.
[38] N.M. Admin. Code §§19.15.17.F.3 to -9.; N.M. Admin. Code §§19.15.17.G.2 to -5.
[39] Telephone Interview with Steve Henke, *supra* note 34.
[40] *Id.*
[41] *Id.*
[42] *Groundwater Contamination*, EarthWorks, http://www.earthworksaction.org/NM_GW_Contamination.cfm.
[43] *Id.*
[44] *Id.*
[45] *Pit Pollution*, EarthWorks, http://www.earthworksaction.org/pitpollution.cfm.
[46] *Id.*
[47] Statement of Review Issues for Respondent at 4, Boling Enters., Inc. v. N.M. Oil Conservation Comm'n (N.M. Dist. Ct. 2008)(D-0101CV2008-01863) (available at http://nmenvirolaw.org/images/pdf/pit_rule_appeal_brief.pdf).
[48] Winthrop Quigley, *N.M.'s Oil, Gas Revenues Shrinking Due to Tougher Regulations, Supply Glut*, Albuquerque Journal, Nov. 29, 2009, http://www.abqjournal.com/news/state/29221332state11-29-09.htm.
[49] *Id.*
[50] *New Mexico Oil and Gas Pit Regulation Appeal*, New Mexico Environmental Law Center, (Feb. 23, 2011), http://nmenvirolaw.org/index.php/site/cases/new_mexico_oil_and_gas_pit_regulation_appeal/.
[51] Sherri Stuewer, Vice President, Environmental Policy and Planning, ExxonMobil Corp., Address at Dept. of Interior Forum on Best Hydraulic Fracturing Practices 21 (Nov. 30, 2010) (transcript available at http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=79514).

Renewing Uranium Mining in New Mexico:
Morris v. Nuclear Regulatory Commission

*Ana Romero Jurisson**

In *Morris v. Nuclear Regulatory Commission*, a group of ranchers, environmentalists, and members of the Navajo Nation sued the Nuclear Regulatory Commission for issuing a license to Hydro Resources, Inc. (HRI) to mine for uranium in McKinley County, New Mexico.[1] The Tenth Circuit Court of Appeals held on March 8, 2010, that the NRC violated neither the Atomic Energy Act (AEA) nor the National Environmental Policy Act (NEPA) by granting HRI a license to begin in situ leach (ISL) mining for uranium.

HRI, a subsidiary of Uranium Resources, Inc., is one of several companies seeking to renew uranium mining in New Mexico. HRI applied for a license to mine for uranium using ISL mining at four locations in McKinley County in 1988.[2] Known cumulatively as the Crownpoint Uranium Project, the sites are located near Church Rock and Crownpoint, near the Navajo Reservation.[3] The plaintiffs in *Morris* challenged the licensing at two adjacent sites near Church Rock referred to as Sections 8 and 17.[4]

History and Context

Uranium mining in the United States began shortly after World War II.[5] Between 1944 and 1986, mining companies extracted 3.9 million tons of uranium ore from southwestern states such as Arizona, New Mexico, and Utah.[6] New Mexico was the largest producer of uranium, with most of the mining occurring in the western part of the state, near the Navajo reservation.[7] The uranium boom began declining in the 1970s and by the time most of the mines closed in the 1990s, the price had dropped below the cost of production.[8] Over 500 mines were abandoned, often leaving piles of radioactive waste behind.[9]

Despite the inadequate cleanup measures, interest in uranium mining has renewed due to increased demand and prices. By the early 2000s, a new boom appeared, with the price reaching $143 per pound in 2007.[10] The demand for uranium rose due to the depletion of domestic fuel stockpiles for existing nuclear plants, increased international energy demand, and climate change, which has encouraged the development of alternatives to fossil fuels.[11]

The area near Church Rock and Crownpoint is part of the Grants uranium district, which was the highest producing district in the United States from 1951 through 1980.[12] In 1979, due to the failure of the dam of a mill-tailing pond at United Nuclear Corporation's Church Rock Mill, 1,100 tons of radioactive mill waste and 95 million gallons of mine effluent were dumped into the Rio Puerco.[13] The spill received little publicity, though it was larger than the release at Three Mile Island and contaminated water sources over 80 miles downstream.[14] United Nuclear Corporation only cleaned up approximately one percent of the spill material and resumed operation within two weeks[15] As a result of this incident and the inadequately decommissioned mines, respiratory diseases and cancers increased in nearby communities while cancer incidence declined in the rest of the country.[16] The EPA is currently working to clean up the sites with assistance from the Superfund Program.[17]

Morris v. NRC

Morris v. NRC arose in part because local communities felt that the NRC should have considered pre-existing radiation

from past mining before issuing HRI a license.[18] The case addressed two overarching issues: (1) airborne radiation at Section 17[19] and (2) groundwater contamination and restoration at Section 8.[20]

Section 17: Airborne Radiation

Morris first addresses whether the NRC violated the AEA and NEPA by issuing the license despite pre-existing airborne radiation from past mining. The petitioners argued that, by issuing the license, the NRC violated the AEA mandate that "the NRC not issue any license that is 'inimical to… the health and safety of the public.'"[21] Specifically, they challenged the NRC's interpretation of 10 C.F.R. § 20.1301(a)(1), asserting that the regulation requires the NRC to consider airborne radiation levels from past mining.

Section 20.1301(a)(1) limits the annual amount of radiation that individuals may be exposed to from a licensed operation, but excludes "background radiation" from that calculation.[22] The parties did not dispute that the new ISL mining would produce levels of airborne radiation well below the limit imposed by section 20.1301(a)(1).[23] However, while the petitioners asserted that the NRC should consider the pre-existing emissions from the site—which far exceeded the limits—the NRC interpreted the regulation to require consideration of only what the new project itself would produce.[24]

The petitioners asserted that pre-existing radiation from past mining is not "background radiation."[25] The dissent agreed with the petitioners that, because the regulations define "background radiation" as "naturally occurring radioactive material," radiation emissions caused by human activity—mining—cannot be classified as "background radiation."[26] However, the majority held that the NRC did not violate the AEA because its interpretation of pre-existing radiation from past mining as "background radiation" and subsequent decision to grant HRI a license was not clearly erroneous or inconsistent with the regulation.[27]

The petitioners also asserted that the NRC violated NEPA by not giving adequate consideration to the cumulative impact of pre-existing airborne radiation on Section 17 and the radiation that would result from new mining, and by "mischaracteriz[ing] the airborne radiation as 'background radiation.'"[28] However, the court held that the Final Environmental Impact Statement (FEIS) adequately considered the impact of granting the license.[29] Under NEPA, the court's duty is "not to question the wisdom of the agency's ultimate decision," but to enforce the procedural requirement that the agency create an environmental impact statement and give the scientific evidence a "hard look."[30] Additionally, the court held that, even if the NRC was mistaken in classifying radiation from past mining as background radiation, it did not violate NEPA because the FEIS still adequately took cumulative effects into consideration.[31]

Section 8: Groundwater Contamination

The petitioners also asserted that the NRC violated the AEA mandate by issuing the license despite the impact ISL mining would have on groundwater, and violated NEPA by not adequately considering the impact in the FEIS. [32] According to the FEIS, although ISL mining is generally less environmentally harmful than traditional mining, ISL mining still causes groundwater contamination.

Despite this finding in the FEIS, the court concluded that the NRC had adequately considered the probable contamination in its licensing decision,[33] and held that the NRC did not violate the AEA because the license it issued required HRI to restore the groundwater to pre-mining conditions during decommissioning.[34] The license, however, had to address another problem: at the time the NRC issued the license, small-scale tests had demonstrated that groundwater restoration was feasible, but full restoration of groundwater quality after ISL mining had not yet been achieved in fact.[35] Accordingly, the license provides that if HRI cannot achieve pre-mining conditions through reasonable efforts, the secondary goal under the license is to restore water quality so that it does not exceed the maximum concentration levels under EPA and New Mexico regulations.[36] If even secondary goals are deemed unachievable, HRI can request a license amendment allowing it to meet lower standards, as long as it can demonstrate that those lower standards will not be harmful to public health.[37]

The license also requires HRI to provide a surety demonstrating its financial ability to decommission and restore the site,[38] but HRI's surety must only demonstrate its ability to undertake a nine-pore-volume restoration effort.[39] The petitioners challenged the sufficiency of this requirement because adequate restoration may require as many as twenty-eight pore-volumes.[40] However, the court held that the license requirements adequately protected the public health because NRC had weighed evidence demonstrating that nine pore-volumes should be enough.[41]

The petitioners also asserted that the FEIS did not meet NEPA requirements because it did not take a "hard look" at the impact on the groundwater quality in Section 8,

especially if HRI fails to meet the license's stated restoration goals.[42] However, the court concluded that the FEIS did consider the possibility that HRI would not be able to meet the restoration goals, and provided adequate safeguards for that possibility.[43] Consequently, the court held that the NRC had adequately protected public health and considered the environmental impacts, and thus did not violate either the AEA or NEPA.

Relevance for Communities in New Mexico

Because the license requires that HRI clean up the site, including waste from previous mining, it is possible that the air quality could improve due to HRI's development.[44] The FEIS states that, because the radiation emissions from sections of the site exceed the permitted levels, "these areas may be cleaned up as part of the well field decontamination." However, considering the legacy of mining in New Mexico, a regulation that allows the NRC to disregard the pre-existing radiation in licensing decisions may be problematic. Although there are federal and state cleanup efforts in progress, many communities feel betrayed that new mining is going forward when the damage of the past is still a prevalent problem.[45]

The license provisions requiring site restoration and demonstrated financial ability to decommission seem to deal with the problems of the past. However, while ISL mining's contribution to airborne radiation may be negligible, the harms to groundwater are substantial, and it may not be possible to fully restore it.[46] As the court and the FEIS noted, the primary evidence that full restoration of an aquifer is possible is from small-scale tests.[47] Additionally, the aquifer reclamation process from ISL mining is still uncertain because many long term studies have not yet been completed and results are highly dependent on the specific geological characteristics of the site.[48]

In order for New Mexican communities to be adequately protected, regulations should take into account the pre-existing radiation levels caused by previous mining. Additionally, although ISL mining is safer than traditional open-pit mining, it still poses significant risks to groundwater. Consequently, further data is necessary regarding restoration capabilities before permitting ISL uranium mining near communities that are already suffering from prolonged exposure to high levels of radiation.

(Endnotes)

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[1] Morris v. Nuclear Regulatory Comm'n, 598 F.3d 677, 681 (10th Cir. 2010) (hereinafter "Morris v. NRC"), *cert. denied*, Morris v. Nuclear Regulatory Comm'n, 131 S. Ct. 602 (2010).

[2] *Id.* at 681-82.

[3] *Id.*

[4] *Id.* at 682.

[5] Timothy Benally, Sr., *Navajo Uranium Miners Fight for Compensation*, In Motion Magazine, Sept. 20, 1999, http://www.inmotionmagazine.com/miners.html.

[6] Bureau of Indian Affairs et al., Health and Environmental Impacts of uranium Contamination in the Navajo Nation: Five-Year Plan 4 (2008) (hereinafter "5 Year Plan"); Judy Pasternack, *Blighted Homeland: A peril that dwelt among the Navajos*, Los Angeles Times, Nov. 19, 2006, *available at* http://www.latimes.com/news/la-na-navajo19nov19,0,5351917.story.

9 James Peach & Anthony V. Popp, The Economic Impact of Proposed Uranium Mining and Milling Operations in the State of New Mexico 38 (Arrowhead Center, 2008).

[8] *Id.* at 40.

[9] EPA 5 Year Plan, *supra* note 6, at 4; Pasternack, *supra* note 6.

[10] Peach, *supra* note 7, at 40.

[11] *Id.* at 24.

[12] V. McLemore, *Uranium Resources in New Mexico, in* 2007 SME Annual Meeting February 25-28 Salt Lake City, Utah 1 (Society for Mining, Metallurgy & Exploration, 2007), *available at* http://geoinfo.nmt.edu/staff/mclemore/documents/07-111_18.pdf.

[13] Doug Brugge, et al., *The Sequoya Corporation Fuels Release and the Church Rock Spill: Unpublicized Nuclear Releases in American Indian Communities*, 97 American Journal of Public Health 1595, 1598 (2007).

[14] *Id.*

[15] *Id.*

[16] Benally, *supra* note 5.

[17] U.S. Environmental Protection Agency, *Region 9: Superfund, Abandoned Uranium Mines on the Navajo Nation*, http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/7508188dd3c99a2a8825742600743735/26fbc51aac6a65988257007005e9416!OpenDocument (April 20, 2011).

[18] Morris v. NRC, 598 F.3d 677, 684 (10th Cir. 2010), *cert. denied*, Morris v. Nuclear Regulatory Comm'n, 131 S. Ct. 602 (2010).

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Protecting New Mexico Waters Through ONRW Designation

*Samantha Ruscavage-Barz**

On Earth Day 2008, Governor Bill Richardson announced New Mexico's intention to seek Outstanding National Resource Water ("ONRW") designations for surface waters within U.S. Forest Service Wilderness Areas in New Mexico. Following an extensive public outreach and administrative process, on November 30, 2010, the New Mexico Water Quality Control Commission ("WQCC") designated over 700 miles of the State's headwater streams as Outstanding National Resource Waters ("ONRWs").[1]

An Environmental Protection Agency regulation promulgated under the federal Clean Water Act ("EPA rule") provides for the designation of high quality waters as ONRWs.[2] The EPA rule provides that states "shall develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy."[3] Under its antidegradation policy, a state must establish state water quality standards to protect three categories of waters, commonly referred to as "Tier I," "Tier II," and "Tier III" waters, with "Tier III" waters having the highest quality.[4] ONRWs are "Tier III" waters.[5] However, neither state nor federal law automatically protects waters that qualify as ONRWs. The WQCC must affirmatively designate ONRWs through a rulemaking proceeding in accordance with the Clean Water Act, EPA rules, the Water Quality Act, and criteria provided by state water quality standards.[6] Once designated, ONRWs receive the highest level of water quality protection under federal and state regulations.[7]

Under New Mexico's water quality regulations, "[a]ny person" can nominate a surface water of the State for ONRW designation by filing a petition with the WQCC.[8] The petitioner must demonstrate that the nominated waters meet one of the following three criteria for ONRW designation:

> (1) the water is a significant attribute of a state special trout water, national or state park, national or state monument, national or state wildlife refuge or designated wilderness area, or is part of a designated wild river under the federal Wild and Scenic Rivers Act; or
>
> (2) the water has exceptional recreational or ecological significance; or
>
> (3) the existing water quality is equal to or better than the numeric criteria for protection of aquatic life and contact uses and the human health-organism only criteria, and the water has not been significantly modified by human activities in a manner that substantially detracts from its value as a natural resource.

20.6.4.9(B) NMAC. Prior to the 2010, the WQCC had made only two ONRW designations in New Mexico—the Rio Santa Barbara in the Pecos Wilderness and waters within the U.S. Forest Service Valle Vidal special management unit.[9]

In February 2010, the New Mexico Environment Department, in cooperation with the New Mexico Department of Game and Fish and the New Mexico Energy, Minerals, and Natural Resources Department, petitioned the WQCC to designate as ONRWs all surface waters in the U.S. Forest Service Wilderness Areas of New Mexico.[10] On May 17, the

State amended its petition and limited it to requesting designation of named perennial streams only, excluding intermittent and tributary streams from the ONRW nomination. The WQCC held public hearings on the State's petition from September 14-17, 2010, and from October 12-14, 2010, in which multiple parties provided technical testimony and approximately 80 citizens provided public comments.[11] Several environmental and outdoor recreation groups participated as parties in the ONRW rulemaking proceedings and proposed modifications to the State's ONRW nomination. The River Groups[12] proposed modifying the petition by adding intermittent and tributary streams back onto the list of nominated waters, as provided by the State's February 2010 petition. WildEarth Guardians also proposed adding non-perennial waters to the petition and, in addition, proposed modifying the State's petition to include all waters in Forest Service Roadless Areas that were adjacent to Wilderness Areas.[13]

The parties presented expert testimony to show that excluding non-perennial waters from the ONRW designation would create problems for both management and ecosystem protection of ONRWs. From a management standpoint, designating all waters within Forest Service Wilderness is the most straightforward management approach and does not require any additional administrative steps to define whether a water is perennial or seasonal, a distinction which could change during times of drought or as a result of climate change. From an ecological standpoint, any degradation of non-perennial waters impacts and accumulates in perennial waters. The groups argued that because water quality begins in the upper reaches of watersheds, any meaningful protection of water quality must also extend to the non-perennial waters located in those upper reaches. The WQCC rejected the proposal to extend ONRW designation to non-perennial waters in Forest Service Wilderness Areas, explaining that the proposal was not a "logical outgrowth" of the State's Petition because interested parties could not reasonably have anticipated an expanded ONRW designation from the State's Petition.[14]

In their argument for extending ONRW designation to Roadless Areas, WildEarth Guardians provided expert testimony as to the biological and hydrological connectivity of Wilderness and Roadless waters whereby failure to extend ONRW protection to waters in Roadless Areas artificially segments an ecosystem, resulting in protection of only part of any species' critical range. An economist testified that extending ONRW designation to Roadless Areas will not only enhance current economic benefits, it will also help to avoid costs associated with water treatment in downstream areas. The avoided costs associated with avoiding degradation of headwater streams could be as high as $42 million annually. As with the non-perennial water proposal, the WQCC rejected the proposal to extend ONRW designation to all waters in Forest Service Roadless Areas on procedural grounds.[15]

The New Mexico Cattle Growers Association ("NMCGA") and two irrigation associations also participated as parties in the administrative proceedings and opposed on procedural grounds the State's petition to designate ONRWs in Forest Service Wilderness Areas.[16] The groups claimed that the State's ONRW petition did not comply with the procedures for nominating ONRWs established by 20.6.4.9(A) NMAC and failed to demonstrate that the nominated waters met the criteria for ONRW designation at 20.6.4.9(B). The WQCC rejected these arguments as "not well founded" because the record showed that the State had met all of the requisite procedures for ONRW nomination and had demonstrated that the nominated waters met at least one of the ONRW criteria.[17]

On January 7, 2011, the NMCGA filed a motion with the WQCC requesting a stay of the WQCC's decision to designate over 700 miles of New Mexico waters located in Forest Service Wilderness Areas as ONRWs. The WQCC will hear arguments for and against the stay on May 10, 2011. On January 14, 2011, the NMCGA appealed the WQCC's ONRW decision to the New Mexico Court of Appeals. WildEarth Guardians and the River Groups have moved to intervene on behalf of the WQCC. The appeal remains pending as of press time.

The quality of water in New Mexico's undisturbed forests is exceptional. Healthy forest ecosystems continually capture, store, and filter water. Water from these forests flows to towns, cities, and farms providing clean water for drinking, irrigation, and wildlife. ONRW designation of perennial headwater streams in Forest Service Wilderness Areas will help prevent degradation of water quality and proactively mitigate the consequences of climate change in these important streams that play a significant role in the ecology and economy of New Mexico.

(Endnotes)

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[1] Water Quality Control Comm'n, Order and State-

MENT OF REASONS ("WQCC SOR"), at 23 (Dec. 15, 2010), *available at* http://www.nmenv.state.nm.us/swqb/ONRW.
[2] 40 C.F.R. § 131.12(a) (2010).
[3] *Id.*
[4] 40 C.F.R. § 131.12(a)(1)-(3); 48 Fed. Reg. 51,400, 51,403 (Nov. 8, 1983).
[5] 40 C.F.R. §131.12(a)(3).
[6] NMSA 1978, § 74-6-4(D) (2009); 20.6.4.9 NMAC
[7] Federal regulations require that "water quality shall be maintained and protected" in ONRWs. 40 C.F.R. § 131.12(a)(3). State regulations mandate that "[n]o degradation shall be allowed in [ONRW] waters." 20.6.4.8(A)(3) NMAC.
[8] See 20.6.4.9(A)(1)-(6) NMAC for petition requirements.
[9] 20.6.4.9(D)(1)-(2) NMAC.
[10] The State's February 2010 and May 2010 ONRW petitions are available at http://www.nmenv.state.nm.us/oots/HearingOfficer/WQCC10-01/index.html.
[11] WQCC SOR, *supra* note 1, at 5. Transcripts of the public hearings are available at http://www.nmenv.state.nm.us/swqb/ONRW.
[12] The "River Groups" included Amigos Bravos, New Mexico Backcountry Hunters and Anglers, New Mexico Trout, and the New Mexico Wildlife Federation.
[13] In 2008, the State issued a draft petition for public comment that proposed ONRW designation of all waters in U.S. Forest Service Wilderness Areas and Roadless Areas. The State removed Roadless Areas from subsequent drafts in response to House Joint Memorial 49, adopted in 2009. WQCC SOR, *supra* note 1, at 2.
[14] *Id.* at 22; *see also Am. Coke & Coal Chems. Inst. v. EPA*, 452 F.3d 930, 938-39 (D.C. Cir. 2006) (explaining that if a final rule is a "logical outgrowth" of the proposed rule, a new notice and comment period is not required).
[15] WQCC SOR, *supra* note 1, at 21.
[16] Although these groups opposed the State's ONRW petition, both grazing and acequia activities are explicitly excluded from compliance with ONRW standards. *See* 20.6.4.8(A)(3)(d) NMAC ("Preexisting land-use activities, including grazing, allowed by federal or state law prior to designation as an ONRW, and controlled by best management practices (BMPs), shall be allowed to continue so long as there are no new or increased discharges resulting from the activity after designation of the ONRW."); 20.6.4.8(A)(3)(e) NMAC ("Acequia operation, maintenance, and repairs are not subject to new requirements because of ONRW designation.").
[17] WQCC SOR, *supra* note 1, at 17-18.

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[19] *Id.* at 684.
[20] *Id.*
[21] *Id.* at 685 (citing 42 U.S.C. § 2099 (2008)).
[22] 10 C.F.R. § 20.1301(a)(1) (2011).
[23] *Morris v. NRC*, 589 F.3d at 684.
[24] *Id.*
[25] *Id.* at 686.
[26] *Id.* at 707 (Lucero, J., dissenting) (citing 10 C.F.R. § 20.1003 (2011)).
[27] *Id.* at 689-90.
[28] *Id.* at 690, 691.
[29] *Id.* at 693.
[30] *Id.* at 691, 693.
[31] *Id.* at 693.
[32] *Id.* at 694 (citing 42 U.S.C. § 2099 (2008)).
[33] *Id.* at 694.
[34] *Id.* at 697.
[35] *Id.* at 695.
[36] *Id.* at 697.
[37] *Id.* at 698.
[38] *Id.* at 699.
[39] *Id.* Pore-volume refers to the number of times the aquifer needs to be flushed during the restoration process. *Id.* at 695.
[40] *Id.* at 699-700.
[41] *Id.* at 700.
[42] *Id.* at 694.
[43] *Id.* at 703; *see also supra* text accompanying notes 32-37 (describing secondary goals and requirements if HRI is unable to meet secondary goals).
[44] *Morris v. NRC*, 589 F.3d at 693 n. 15.
[45] Pasternack, *supra* note 6.
[46] *See Morris v. NRC*, 589 F.3d at 694-704.
[47] *Id.* at 695-97.
[48] James H. Clarke & Frank L. Parker, *Uranium Recovery and Remediation of Uranium Mill Tailings: Russian and U.S. Experience*, *in* CLEANING UP SITES CONTAMINATED WITH RADIOACTIVE MATERIALS: INTERNATIONAL WORKSHOP PROCEEDINGS 69, 70 (National Academy of Sciences, 2009); U.S. GEOLOGICAL SURVEY, CONSIDERATION OF GEOCHEMICAL ISSUES IN GROUNDWATER RESTORATION AT URANIUM IN-SITU LEACH MINING FACILITIES 80-81 (2007).

Lea County Aquifers:
From Prospecting for Fresh Aquifer Water when Compounding Production Fluids to the Prospect of Recycling Existing Production Fluids

*D.W. Vitt**

Lea County, New Mexico has been blessed with abundant oil and natural gas resources but faces a critical shortage of the fresh water supplies needed to facilitate energy production. Oil and natural gas production in the southeastern corner of New Mexico creates almost 400 million barrels[1] of liquid waste product each year. If 10% of that liquid waste stream could be recycled it would greatly reduce the need to utilize fresh aquifer water. Lea County has thus started working toward implementing technological innovations for recycling these "Production Fluids" in order to increase the sustainability of its aquifers.

Lea County, which is approximately the size of Delaware, has no perennial or intermittent streams, despite being located within the Pecos River watershed. Early settlers to the western United States initially passed over Lea County, except for a single settlement and post office established for travelers crossing the Llano Estacado at Monument Springs, which was the only year round source of fresh water. Ranchers, who relied on temporary buffalo wallows and natural playas to water their herds, would also frequent the area during times of plentiful rain.[2] Ranching and homesteading did not take off until windmills, capable of drawing water from Lea County's five fresh water aquifers to the surface, were introduced to the region.[3] When oil and natural gas were later discovered in Lea County, internal combustion and electrical pumps had to be used to bring larger quantities of fresh water to the surface for oil and gas extraction.

Every aquifer in Lea County, except the one coincidently named Delaware, is in decline with more water being pumped than recharged.[4] All users are aware of the critical necessity to conserve fresh water and are implementing conservation methods from serving glasses of water at restaurants only upon request to xeriscaping tree lawns and athletic fields with synthetic turf. In order to promote sustainability and hometown "blue pride," the Lovington School System installed Blue Synthetic Turf for its sports teams, in conflict with the federal trademark protection obtained by Boise State for its blue football field.[5] Hopefully, in the interest of conservation, the synthetic turf conflict can be settled without litigation. Lea County is already facing more than its share of controversy over its water resources due to its location within the Pecos River watershed, which is covered by the 1949 Pecos River Compact.[6] The Compact has led to

much litigation between the states of New Mexico and Texas regarding the allocation of Pecos River water.[7] In order to prevent future conflicts, the Pecos River Resolution Corporation, a non-profit entity, is developing a database for the Pecos River watershed upon which future policy discussions and educational research can be factually based.[8]

Despite the huge quantity of Lea County water dedicated to oil and gas production, it is a misnomer to call the oil and gas industry a "water" user. While water is a major component of the fluids used in the well drilling process, once the water has been combined with chemicals and other dissolved solids then used during the well drilling process it cannot be put to any further beneficial use as water.[9] Production Fluids have traditionally been nicknamed "Produced Water," but in actuality they are proprietary compounds that act and perform completely differently than water would during the drilling process, holding more total dissolved solids and reducing heat.[10] After their initial use in the drilling process, Production Fluids are currently considered a waste product. After well completion, Production Fluids are extracted and re-injected deep below the fresh water aquifers in disposal wells along with the other non-oil fluids that come up during production.[11]

Emerging technologies available today are creating the potential for Production Fluids to be recycled, reducing the need to compound additional fresh aquifer water. To foster the development of these new technologies, the Colorado School of Mines undertook a study in 2009, entitled *An Integrated Framework for Treatment and Management of Produced Water*.[12] This study is examining 54 technologies and rating them regarding their effectiveness and commercial feasibility for recycling Production Fluids. The final findings of this ongoing study will be published in 2012.

The idea that Production Fluids should be conserved is in line with ideas dating back several decades. For example, in July of 1979 President Carter gave a speech[13] in which he outlined the need for our nation to establish a Natural Resources and Energy Policy in the wake of the "Oil Shocks" of the 1970's. Our nation has moved forward in fits and sputters ever since, but current events in Libya and the Persian Gulf States have placed the conservation of all natural resources on the center stage once again in policy discussions.[14] Senator Udall and Congressman Pearce recently visited Lea County and spoke about the findings presented in a study entitled *Rising Above the Gathering Storm*.[15] The study is a bipartisan call to action for collaboration between America's educators and engineers to reinvigorate our "Spirit of Innovation" in order to create new technologies that will both protect our natural resources and improve our economy. Members of the legal profession should break from their typical adversarial roles and contribute to this collaborative innovation process.[16]

Lea County has undertaken several measures in an attempt to more aggressively address the situation regarding its aquifers. The county has engaged the firm Emergent Technologies, Inc. to survey of the region's research universities in order to collect data on "green" technologies that are ready for field-testing and eventually commercialization. This yearlong project will culminate in a public presentation, *The Lea County Technology Landscape*, covering the critical issue of compounding fresh aquifer water into Production Fluids and other green initiatives.[17]

Additionally, a coalition of government and private sector actors in Lea County is moving forward to conduct field-testing of some emerging treatment methods at a site in Jal, New Mexico. One of the participating entities, Eldorado Biofuels, is bringing its biological-remediation process for recycling Production Fluids to Lea County and testing research developed by Los Alamos Labs and Texas A & M's Pecos AgStation.[18] Another entity, H2O Cleaning Technolo-

gies, Inc., is testing a system that utilizes a mechanical-separation process for recycling Production Fluids. This patented proprietary system relies on changing viscosity using controlled temperature variation, which eliminates the Production Fluids' ability to retain the wastes picked up during the drilling process.[19] These test technologies, used separately or in tandem, offer the promise of reducing the need for fresh aquifer water by allowing nearly continuous recycling of the existing Production Fluids.

It is possible that emerging technologies, including bio-remediation and mechanical separation, may allow the oil and natural gas industry to create the Production Fluids needed for energy production from the already existing waste stream rather than continuing to deplete Lea County's fresh aquifer water. These new technologies alone might be enough to extend the life of our aquifers, and if these technologies are implemented along with aggressive conservation measures it may be possible for Lea County's aquifers to become sustainable as we move forward in the twenty-first century.

(Endnotes)

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[1] The Natural Energy Technology Laboratory, *Membrane Technology for Produced Water at Lea County, NM* (2011), http://www.netl.doe.gov/technologies/oil-gas/Petroleum/projects/Environmental/Produced_Water/05227_MembraneTech.html.

[2] *See generally* Gil Hinshaw, Lea: New Mexico's Last Frontier (1967); Connie Brooks, The Last Cowboys: Closing the Open Range in Southeastern New Mexico, 1890's–1920's (1995).

[3] N.M. Office of the State Engineer, *Region 16 – Lea County Regional Water Plan*, at Sec. 6, *Water Resources Assessment for the Water Plan Study Area* (1999), *available at* http://www.ose.state.nm.us/isc_regional_plans16.html.

[4] *Id.*

[5] John Graham, *"Go Big ****" Boise State Claims Wildcat Field Infringes Trademark,* Lovington Leader, Feb. 10, 2011, Front Page.

[6] Pecos River Compact, S. Doc. No. 109, 81st Congress, 1st Sess. (1949).

[7] *See* The Economist Online, *A Lawsuit Runs Through It* (Nov. 2002), at http://www.economist.com/node/1446707; N.M. Office of the State Engineer, *Brief History of the Office of the State Engineer* (2007), *at* http://www.ose.state.nm.us/state_engineer_history.html; *see also* Texas v. New Mexico, 462 U.S. 554 (1983).

[8] Pecos River Resolution Corporation, http://pecosriverresolution.com (discussing the mission of the PRRC).

[9] The Oil Conservation Division within the New Mexico Energy, Minerals and Natural Resources Department regulates Production Fluids. *See* http://www.emnrd.state.nm.us/ocd.

[10] *See* Drilling Waste Management Information System, http://web.ead.anl.gov/dwm/regs/state/newmexico/index.cfm (listing and explaining New Mexico's regulation of Production Fluids).

[11] U.S. Dep't of Energy, Office of Fossil Energy Nat'l Energy Tech. Lab., Modern Shale Gas Development in the United States: A Primer (Apr. 2009), *available at* http://www.netl.doe.gov/technologies/oil-gas/publications/epreports/shale_gas_primer_2009.pdf.

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New Legislation Aims High, Falls Short of Resident Hunters' Expectations

*Aaron Martin**

I. Introduction

Demand for big game hunting licenses in New Mexico vastly exceeds supply. Inability to draw a big game license is "one of the biggest complaints" of resident hunters.[1] On April 8, 2011, Governor Susana Martinez enacted a law that attempts to address this problem. Senate Bill 196, introduced by Senator George Munoz,[2] was originally a proposal to increase the resident big game license quota from 78 to 90 percent;[3] the law as enacted increases the resident quota to 84 percent.[4] This legislation also opens to residents the 10 percent guided permit allocation[5]—a category previously reserved exclusively for nonresidents—and allocates undistributed tags from this category to resident hunters. Because it replaces application fees with a requirement that all draw applicants purchase a game hunting license,[6] the law is also expected to raise additional an additional $500 to $700 thousand for the Game Protection Fund.[7] While the law affirms the citizens' right to this natural resource, does it actually answer the demands of resident hunters? This article answers that question, provides a brief overview of the history of big game draw laws in New Mexico, and makes policy recommendations regarding future changes to New Mexico's big game draw system.

II. Legal Issues

Under the Reaffirmation of State Regulation of Resident and Nonresident Hunting and Fishing Act of 2005 (Section 6036),[8] which gives states broad discretion to formulate game management policy, the legislature has power to all but eliminate nonresident hunting. This has not always been the rule—the debate over whether a state's discrimination against non-resident hunters violates the Dormant Commerce Clause is one that goes back as far as the first game regulations and has continued until very recently.[9] In *Baldwin v. Fish and Game Commission of Montana*,[10] the Supreme Court held that a law requiring nonresidents to pay more than residents for hunting licenses violated neither[11] the Privileges and Immunities nor the Equal Protection Clause of the Fourteenth Amendment because hunting is not a fundamental right.[12]

Shortly after *Baldwin*, the Court in *Terk v. Gordon* addressed New Mexico's draw system. In that case, a nonresident hunter claimed nonresident quotas violated the Privileges and Immunities Clause. The Supreme Court reaffirmed *Baldwin* regarding license fees, but the State of New Mexico "did not seek review of that portion of the [district court] judgment that held the allocation of licenses to be unconstitutional."[13] In *Conservation Force, Inc. v. Manning*,[14] the Ninth Circuit found that Arizona's 10 percent cap on nonresident hunting permits for all bull elk and antlered deer violated the Dormant Commerce Clause. The Tenth Circuit roundly criticized this anomalous decision in *Schutz v. Thorne*.[15] That court stated that "[R]esidents…especially those who hunt or fish—have a vested long-term interest in the sustainability of [the state's] wildlife management system,"[16] and gave multiple reasons to justify a state's preference for resident hunters.[17]

Section 6036 responded to *Conservation Force*[18] by empowering states "to regulate…fish and wildlife within [their] boundaries, including by means of laws or regulations that differentiate between residents and nonresidents." Section

6036 clearly enunciates the inapplicability of the Commerce Clause to such regulation.[19]

III. Historical Background: Error, Compounded

New Mexico first introduced random drawing in the 1981-82 elk season[20] to reverse the negative results of its solution to the *Terk* suit, which was to eliminate quotas and give bull elk licenses to all eligible applicants[21] without restricting hunters to any particular area.[22] From 1977 to 1980, Game and Fish issued nearly twice the tags it had in previous years.[23] During that time, this influx of hunters, minus scientific game management, decimated the Jemez and Gila elk herds.[24] The state introduced a random drawing system, limited tags, and assigned hunters to specific management units in 1981 to end the wholesale slaughter.[25] In 2004, Game and Fish instituted for deer rifle hunts a random drawing system substantially similar[26] to the elk system.[27] All permits have been allocated by random draw since 2005.[28]

Although limiting the number of hunting licenses furthers the goal of wildlife conservation, the random drawing system is not in accord with the State Game Commission's mandate, which is to "develop a statewide system for hunting activities that increases participation by New Mexico Residents."[29] The random drawing system, rooted in an erroneous interpretation of law, is thus a reminder of the state's "snatching defeat from the jaws of victory"[30] in *Terk*, a decision that has been rendered irrelevant by Section 6036.

IV. Mirroring Reality: Conclusion & Recommendations

Historically, the hunt quota system has assured relatively equal access to permits for residents and nonresidents alike. The table below provides a graphical comparison of permits drawn, by number and percentage for all classes of hunters (resident, nonresident, and guided nonresident) for the 2009–10 and 2010–11 New Mexico elk seasons.[31] The table also demonstrates the impact of the new legislation, proposed and enacted, upon resident hunters.

TABLE 1: Elk Permits

Hunt	Applied	Drawn	Success %		6% Increase (enacted law)		12% Increase (proposed law)	
	2010–2011 Total Permits--20,255		2010-2011	2009–2010	# Added	Success %	# Added	Success %
Resident	41,089	16,400 (81%)	40%	35%	1,215	43%	2,431	46%
Nonresident	9,962	2404 (12%)	24%	20%				
Guided nonresident	4,112	1,506 (7%)	37%	32%				
Total	55,163	20,310						

This data clearly demonstrates the crux of the problem: supply outstrips demand. In the 2010-11 season, 55,163 applicants competed for only 20,255 elk permits. Residents were only about 15 percent more likely to draw a permit than nonresidents in the elk seasons.[32]

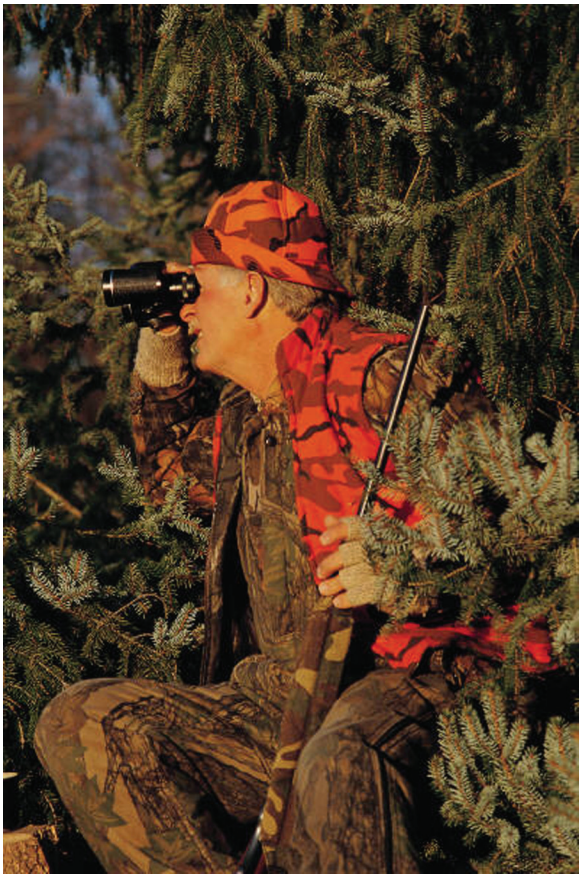
Surprisingly, increasing resident licenses by either Senate Bill 196's proposed 12 percent or the enacted 6 percent will have only a nominal effect on resident draw success. Because so many residents compete for so few licenses, the success rate for residents will increase by only 3 percent.

Senate Bill 196 only mirrors reality. In the past, shortfalls in guided license applications have resulted in diversion of leftover permits to residents. The new legislation will achieve the same result, with little change in actual license allocation. In the 2010-11 elk season, the actual tag allotment was: 81 percent resident, 12 percent nonresident, and 7 percent guided nonresident.[33] Thus, the law, which allocates 84 percent of tags to residents, is a close approximation of actual permit distribution and will result in little change for resident hunters.

While the enacted law does state that "[t]he director shall offer first choice of undersubscribed hunts to residents, whenever practicable,"[34] this will likely result in a resident tag allocation similar to the originally proposed legislation—about 12 percent, which would translate to a mere 6 percent gain in draw success rates for residents in the State's coveted elk draws. Even if the legislature allocated 99 percent of these licenses to residents, the resident success rate in elk hunts would not increase above 50 percent.[35] Thus, any modification of the random draw system is unlikely to "increase[] participation by New Mexico Residents,"[36] because there is little room for increase, and because random drawing does not address the problem of the hunter who fails to draw a permit year after year. If New Mexico earnestly seeks to improve the resident hunting experience and preserve this unique aspect of its rural cultural heritage, it should reconsider its random drawing system.

Random drawing is not the only possible methodology for conducting the draw. Colorado, for example, utilizes a

preference points system, which provides both predictability and the allure of success. Unlike a random draw, where it is statistically possible for some individuals to never draw, all who participate in a preference points system will eventually gain an opportunity to hunt. This system is a longitudinal solution to the problem of the hunter who fails to draw, year in year out. Under the preference points model, hunters accrue one preference point for each year they apply but do not draw.[37] Hunters with the most preference points are drawn first, then in descending order by number of points until licenses are exhausted. Colorado publishes the requisite number of preference points to be drawn for a given hunt, which increases transparency and allows informed decision making.[38] Because preference points provide hunters with a mathematical advantage, once a hunter has accumulated enough points, access to a hunting opportunity becomes certain. Hunters are thus closer to an investment in a future hunting opportunity than a mere gamble. By implementing a preference points system, New Mexico could achieve "a statewide system for hunting activities that increases participation by New Mexico Residents,"[39] because all residents who participate would eventually gain an opportunity to hunt.



This year, Colorado further incentivized applications by instituting a hybrid drawing system whereby 20 percent of the tags for high demand hunts are awarded through random drawing.[40] Colorado's system provides both predictability and the thrill of a gamble: hunters know when they will be drawn by their preference points, but there is always a chance that those who have insufficient points will obtain a license. New Mexico can improve hunting opportunities for residents and nonresidents by freeing itself from the embarrassing pall of *Terk* and replacing its outdated random draw with a preference points system. Given the negligible impact of altering the quota system, changing the methodology of the draw is a practical solution to the problem of securing equitable access to resident hunters. Section 6036 provides states significant latitude in forming wildlife policy. While Senate Bill 196 admirably restores a significant portion of wildlife resources to its rightful owners, it does not go far enough to address the problems of hunter access in New Mexico. If the legislature earnestly seeks to increase participation of New Mexico residents, it should take more considered aim at providing genuine hunting opportunities during its next session, rather than pursuing this path of diminishing returns.

(Endnotes)

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[1] Joel Gay, *90% Quota, Fate of NMDGF up to Legislature*, N.M. Wildlife Federation Outdoor Reporter, Winter 2011, at 1.

[2] S.B. 196, 50th Leg., 1st Sess. (N.M. 2011) *available at* http://www.nmlegis.gov/lcs/_session.aspx?Chamber=S&LegType=B&LegNo=196&year=11.

[3] *Id.*

[4] S.B. 196, S. Fin. Comm. Substitute, at 17, 50th Leg., 1st Sess. (N.M. 2011), *available at* http://www.nmlegis.gov/lcs/_session.aspx?Chamber=S&LegType=B&LegNo=196&year=11.

[5] *Id.*

[6] S.B. 196, *supra* note 2, at 16.

[7] S.B. 196, Fiscal Impact Rep't, 50th Leg., 1st Sess. (N.M. 2011), *available at* http://www.nmlegis.gov/lcs/_session.aspx?Chamber=S&LegType=B&LegNo=196&year=11.

[8] Pub. L. No. 109-13, § 6036, 119 Stat. 231, 289-90 (2005).

[9] *See, e.g.*, Geer v. Connecticut, 161 U.S. 519 (1896); Hughes v. Oklahoma, 441 U.S. 332 (1979).

[10] 436 U.S. 371 (1978).

[11] *Id.* at 388-89.

[12] *Id.* at 373-74.

[13] Terk v. Gordon, 436 U.S. 850, 850 (1978).

[14] 301 F.3d 985, 990 (9th Cir. 2002).

[15] 415 F.3d 1128 (10th Cir. 2005), *cert. denied*, 546 U.S. 1174 (Feb. 21, 2006).

[16] *Id.* at 1136.
[17] *Id.* at 1136-37.
[18] Jodi A. Janecek, Comment, *Hunter v. Hunter: The Case for Discriminatory Nonresident Hunting Regulations*, 90 Marq. L. Rev. 355, 368 (2006).
[19] Pub. L. No. 109-13, § 6036, 119 Stat. 231, 289-90 (2005).
[20] N.M. Dep't of Game & Fish, New Mexico Proclamation Big Game, Turkey & Furbearer Seasons April 1, 1981 Thru March 31, 1982, 17 (1981) (on file with author).
[21] John Crenshaw, *The New Seasons: 1976 Big Game Regulations*, N.M. Wildlife Magazine, Mar.-Apr. 1976, at 17.
[22] Walt Snyder, *Elk-A New Game Plan*, N.M. Wildlife Magazine, July-Aug. 1981, at 4.
[23] *Id.*
[24] *Id.*
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[26] N.M. Dep't of Game & Fish, *Deer Hunt Recommendations Based on Hunter Input*, N.M. Wildlife Magazine, Summer 2004, at 3.
[27] *See, e.g.*, N.M. Dep't of Game & Fish, New Mexico Big Game & Furbearer Rules & Information 2001-2002 License Year 21 (2001) (on file with author).
[28] N.M. Dep't of Game & Fish, New Mexico Big Game & Furbearer Rules & Information 2005-2006 License Year 3, 20-29 (2005) (on file with author).
[29] N.M.S.A. 1978, § 17-2A-2 (2009).
[30] Joel Gay, *N.M. Hunters Feel Pinch of Liberal Nonresident Caps; Court Decisions, Lawmakers Shaped Big Game Tag Allocation*, N.M. Wildlife Federation Outdoor Reporter, Summer 2009, at 6.
[31] N.M. Dep't of Game & Fish, Drawing Odds Reports, 2010-2011 Complete Report (2010), *available at* http://wildlife.state.nm.us/recreation/hunting/index.htm.
[32] *Id.*
[33] *Id.*
[34] S.B. 196, *supra* note 2, at 16.
[35] *See* Tbl. 1, *infra* (because there were only 20,255 permits and 41,089 resident applications, residents could only obtain 49 percent of licenses, even assuming 100 percent resident allocation).
[36] § 17-2A-2.
[37] Colo. Div. of Wildlife, 2011 Colorado Big Game 11 (2010), *available at* http://wildlife.state.co.us/NR/rdonlyres/393CEE85-2EA3-48B9-9480-7ED-C2166361B/0/biggame.pdf.
[38] *See, e.g.*, Colo. Div. of Wildlife, Minimum Preference Point Information, 2010 Species: Elk (2010), *available at* http://wildlife.state.co.us/NR/rdonlyres/FAB33AB5-33BA-4BF4-9E40-12418F55E7BB/0/ElkMinPP10.pdf.
[39] § 17-2A-2.
[40] 2011 Colorado Big Game, *supra* note 37, at 4.

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Commission, and its effect on communities who continue to suffer from prolonged exposure to high levels of radiation from past mining.

Finally, two articles discuss some of New Mexico's cleanest and dirtiest water. Samantha Ruscavage-Barz provides an update on the designation of 700 miles of New Mexico's pristine headwater streams as Outstanding National Resource Waters. And D.W. Vitt describes the technological innovations under way in Lea County, New Mexico, to recycle "Produced Fluids" from oil and gas development in order to stem the use of fresh aquifer water for further energy development.

NREEL strives to meet the needs of our section members. If you have suggestions for improving the section or this newsletter, please contact me at sally.paez@gmail.com. You can also email me if you are interested in submitting a short article for the Winter 2012 issue. I will be seeking submissions in August or September.

Last but not least, many thanks to Kim Bannerman and Jennifer Pruett for their editorial support.

Sally Paez, Editor

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