

FREE

The Appalachian VOICE

April / May 2018

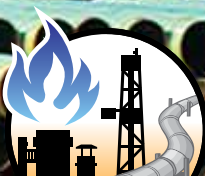
Huge stacks of pipeline sections stretch well beyond the photo at an enormous field in West Virginia



PEOPLE in the path of PIPELINES

◆
Fracking Waste

◆
Storage Hubs



SPECIAL COVERAGE

The Rising Menace of the Fracked Gas Industry

The rush to build massive pipelines and petrochemical plants is putting our region's land, air and citizens at enormous risk.

DISTRIBUTION VOLUNTEERS: Courtney Alley, Alison Auciello, Debbie Bahr, Nelson and Lanie Bailey, Another Season Honey Farm, Becky Barlow, Becca Bauer, Roberta Bondurant, Charlie Bowles, Bethann Bowman, Dale Brady, Lynn Brammer, Ben Bristol, Steve Brooks, Paul Corbit Brown, Teri Crawford Brown, Christa Brusen, Bill Bunch, Sarah Smith Caskey, Charlie Chakales, Shay and Kim Clanton, Megan Ong, Ridge Cook, Dave Cooper, George Cortesi, Darlene Cunningham, Nancy Dagley, John David, Sister Beth Davies, Deborah Deatherage, Clint Dye, Bill, Elliott, Mike Feely, Frank Fry, H A Gallucio, Dave Gilliam, Scott Goebel, Bruce Gould, Gary Greer, Tauna Gulley, Janet Hagy, Christine Harris, Bill Harris, Susan Hazlewood, Eberhard Heide, Sharon Helt, Dr. Laura Henry-Stone, Matt Hepler, Tim Huntley, Dakota Icenhour, Nicholas Johnson, Mary K, Denny Keeney, Donita Kennedy, Katie Kienbaum, Allison Keith, Mary Ann Kokenge, Deborah Kushner, Frances, Lamberts, Susan Lewis, Loy Lilley, Maggie Louden, Diana Lucas, Gail Marney, Brian McAllister, Kate McClory, Kim Greene McClure, Rich McDonough, Tom McIntosh, Mike McKinney, Sherri McMurray, Tim Milling, Joy Miracle, Steve Moeller, Nick Mullins, Don Odell, Rob Osborne, Lee, Payne, Adam Pendlebury, Cleve Phillips, Stephanie Pistello, Chase Pugh, Sister Ann Marie Quinn, Bronwyn Reece, Collin Rees, Carol Rollman, Kristin Rouse, Jenny Rytel, Debbie Samuels, Mar Sartari, Steve Scarborough, Gerry and Joe Scardo, Frank Schaller, Elvira T. Schrader, Susanne Seiler, Kathy Selvage, Mayzie Shelton, Brenda Sigmon, David Skinner, Janeen Solberg, Lucy Spencer, Jennifer Stertzler, Jim Stockwell, Bill Wasserman, John Weitzel, Tina White, Tamara Marshall Whiting, Ann Williams, Barbara Williamson, Diana Wither, Danny Yousef, Gabrielle Zeiger, Ray Zimmerman

A note from the editor

In this issue of The Appalachian Voice, we take an in-depth look at one overarching topic: shale gas extraction. Fracking, frack waste, pipelines and processing facilities affect large swaths of Appalachia in an upfront, immediate way — little is more intrusive than an industry that can infiltrate the water you drink, the air you breathe and the land where you live.

To produce this extended issue, our writers visited with some of the extraordinary people who are resisting the powerful natural gas industry and are preparing to confront the petrochemical industry's latest encroachments. Their stories and their tenacity are remarkable.

Those of us who live far from the fracking fields and

major pipeline routes are also connected to shale gas extraction through our personal energy consumption and our duty as citizens to hold our local, state and federal representatives accountable. In dragging us deeper into dependence on fossil fuels, mega-corporations are stalling our deserved transition to renewable energy and worsening climate change.

Our Executive Director Tom Cormons, whose note often appears on this page, explores this topic in a special letter to readers on page 22.

In solidarity,
Molly Moore



GET INVOLVED environmental & cultural events

Look and See: Wendell Berry's Kentucky

April 12, 7-9 p.m.: Appalachian Voices is co-hosting this free screening of Wendell Berry's film about the changing landscapes of rural America. Bristol, Tenn. Call East Tennessee PBS at (865) 595-0220 or visit tinyurl.com/WB-Look-And-See

Kentucky Native Wildflower Weekend

April 13-15: Learn about the floral diversity of Natural Bridge State Resort Park with guided hikes and evening presentations. Slade, Ky. \$5-20. Call (606) 663-2214 or visit knps.org/wildflower_weekend.html

Sustainable Climbing Workshop

April 14-15: Join climbers of all levels at Breaks Interstate Park to discuss stewardship and more. \$20. Breaks, Va. Call the park at (276) 865-4413 or visit tinyurl.com/Breaks-Climbing

HONEY Convention

April 20-21: Explore more than 70 workshops, classes and presentations on how to help native pollinators and honeybees. Stop by the Appalachian Voices table! \$40 two-day pass. Tazewell, Tenn. Call (423) 626-6200 or visit honeyconvention.com

Wildlife Wetland Walk

April 20, 7-9 p.m.: Go on a family-friendly evening hike to learn about wetland animals at the Allen Creek Nature Preserve. Roseland, Va. \$3-5. Call (434) 325-8169 or visit tinyurl.com/Wetland-Walk

Virginia Creeper Fest

April 28, 12 - 5 p.m.: Celebrate the Virginia Creeper Trail with scavenger hunts, outdoor activities, photography exhibits, music and more. Free. Abingdon, Va. Call (276) 676-2282 or visit vacreeperfest.com

Robeson Rises

April 28, time TBD: Watch a film about a community's resistance to the Atlantic Coast Pipeline at the UPIKE Film and Media Arts Festival. Free. Pikeville, Ky. Call (606) 218-5972 or visit fmafest.org. For info on the film, visit robesonrises.com

Cheat River Fest

May 4-5: Support Cheat River cleanup efforts while enjoying live music, vendors and races. Stop by the Ed. Eddy to discuss water issues in Appalachia. \$5-20 per day. Albright, W.Va. Call (304) 329-3621 or visit cheatfest.org

44th Mount Rogers Spring Naturalist Rally

May 11-13: Blue Ridge Discovery Center hosts field trips, camping, speakers and nighttime programs with naturalists. Troutdale, Va. \$10 weekend pass. Call (276) 293-1232 or visit blueridgediscoverycenter.org/mnr/

Southwest Virginia Economic Forum

May 17, 8 a.m. - 3:30 p.m.: Network with leaders working to improve the economic outlook of the region. Wise, Va. \$35. Call (276) 328-0100 or visit tinyurl.com/uva-economic-forum

See more at appvoices.org/calendar

32nd Appalachian Trail Days Festival

May 18-20: Gather with fellow Appalachian Trail enthusiasts for local hiking, vendors, music, camping and a parade. Stop by the Appalachian Voices table! Damascus, Va. Free, \$5 to camp and \$20 to park over the weekend. Call (276) 475-3831 or visit traildays.us

Matewan Heritage Day

May 19, 11 a.m. - 5 p.m.: Enjoy vendors, live music and reenactments of the Battle of Matewan, a landmark struggle in miners' efforts to unionize. Free. Matewan, W.Va. Call (304)-426-5744 or visit historicmatewan.com/events

Forest Farming Grower-Industry Expo

May 19, 9 a.m. - 5 p.m.: Join forest farmers of all levels for a day of networking and learning. Kingsport, Tenn. Free. Call (540) 231-0790 or visit tinyurl.com/Forest-Farmer-Training

Forest Farmer Field Day

May 20, 10 a.m. - 3:30 p.m.: Tour the Appalachian Harvest herb hub and a farm while engaging in discussions on the economics of cultivating forest-grown medicinal herbs. Duffield, Va. Free. Call (540) 231-0790 or visit tinyurl.com/Forest-Farmer-Field-Day

June 1

Mothers for Water Justice
Keynote panel
FREE and open to the public
7-9:30 p.m., Multi-purpose Room at Graduate Life Center at Virginia Tech.

Keynote speakers include environmental and community advocates **Mary Cromer, Tracey Edwards, Kwavol Hi'osik, and Elise Keaton.** For speaker bios, visit appvoices.org/wjs

June 2

Trainings in water monitoring, grassroots regulatory enforcement and community organizing
Space in the trainings is limited, so register online. Childcare will be provided. Sliding scale fee, scholarships available.

"What Color is Water" Reception
FREE and open to the public
7:30 p.m., Perspective Gallery in the Squires Student Center at Virginia Tech.

Across Appalachia

West Virginia State Park Logging Bill Defeated

By Shelby Jones

On Feb. 23, a bill to lift an 80-year ban on commercial timber harvesting in West Virginia state parks was defeated after widespread public backlash.

State Senate Bill 270, proposed on Jan. 15 with the support of Gov. Jim Justice, would have allowed logging in the parks to raise funding for state parks. In response, conservation groups across the state joined together to form the Save Our State initiative to preserve the parks' "wild and wonderful" forests.

The West Virginia Rivers Coalition, a conservation group, announced that citizens sent 16,866 letters to state legislators through the group's resources.

"A senator told me he had received

more citizen opposition to this bill than any other this session," the coalition's executive director, Angie Rosser, said in a press release.

Representatives from the Save Our State initiative met with West Virginia Commerce Secretary Woody Thrasher to discuss ways to secure funding without extracting natural resources from state parks.

In a state Senate committee meeting on Feb. 12, the bill was substituted with a pilot plan that would only allow commercial logging in Watoga State Park. That plan was also met with criticism, and on Feb. 23, Cabell County Sen. Mike Woelfl announced in a press release that the bill was "as dead as an old chestnut tree."

Changes Underway for Blue Ridge Parkway in 2018

On Feb. 28, the National Park Service announced upcoming Blue Ridge Parkway projects for the 2018 season.

The Linn Cove Viaduct on the Blue Ridge Parkway will be closed for repaving through May 24. Gates will be located by Milepost 303.6 at Wilson Creek Overlook and Milepost 305.1 at an access point with U.S. 221. Within this area, the viaduct and Tanawha Trail that runs underneath the bridge will be closed for all uses.

For decades, Blue Ridge Parkway visitors could stop at Milepost 241.1 for a meal and a view at Bluffs Restaurant, but the shop closed in 2010. This year, the National Park Service staff will be soliciting ideas for the revitalization of the popular Doughton Park facility.

For information about these and other 2018 Blue Ridge Parkway projects, visit appvoices.org/brp2018. — *Hannah Gillespie*

N.C. Struggles to Resolve GenX Contamination

The North Carolina legislature adjourned until May 16 without resolving the debate between the House and Senate over House Bill 189, which seeks to address concerns surrounding Wilmington-area drinking water contaminated by the potentially cancer-causing chemical GenX.

The Senate made major changes to the

bill, which awaits a House vote. At issue is the amount of funding the state Department of Environmental Quality will receive to address the problem, and which advises the DEQ will work with.

As of Feb. 12, GenX had also been found in four wells near a Chemours facility in Parkersburg, W.Va. — *Hannah Gillespie*

Cash for Carbon: Working Woodlands Program Grows in Appalachia

By Hannah Gillespie

Over 25,000 acres will remain undeveloped in Tennessee, Virginia and Eastern Kentucky through a \$4.9 million grant awarded to The Nature Conservancy of Kentucky in December 2017 from the National Resources Conservation Service.

The funds will implement a program called Working Woodlands, which works with landowners to create a 10-year sustainable forest land management plan and Forest Stewardship Council certification, which opens the door to a wider timber market. This is at no upfront cost to the owner.

The Nature Conservancy sells the high-quality carbon offsets stored by these forests to BlueSource — a California company that provides capital for environmental markets — to

cover the cost of the Forest Stewardship Council certification. The owner benefits through sales of carbon and FSC-certified timber.

In Pennsylvania, the program has already been successfully implemented by The Nature Conservancy and Bluesource since 2013.

The Working Woodlands program is open to eligible forestland owners in Pennsylvania and Kentucky with a minimum of 1,500 acres and at least 2,000 acres in Tennessee. The eligibility requirements for the Virginia program had not been released at press time.

"I know this has a potential to be a real boon for the regional economy," Will Bowling with The Nature Conservancy of Kentucky told the Lexington-Herald Leader. "But in the long term, it will preserve one of the area's most valuable assets — its forest."

About the Cover



The cover photo, taken earlier this year, shows pipes used in the construction of pipelines stacked in a large open field near Beckley, W.Va., near the intersection of Route 19 and I-77. © 2018 T. Paige

Water Justice Summit

June 1-2
Blacksburg, Va.
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appvoices.org/wjs

The Water Justice Summit is a leadership development, networking, and skills-building gathering for folks in Appalachia and the Southeast whose water is threatened by fossil fuel industries, faulty public infrastructure and other concerns.



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Eastern Cougar Declared Extinct

The eastern cougar, whose populations once spanned much of the Eastern United States and parts of Canada, was officially declared extinct and removed from the Federal List of Threatened and Endangered Wildlife on Feb. 22.

The eastern cougar is a subspecies of the North American cougar, a species which also includes cougar populations across the Western United States and Canada and the critically endangered Florida panther.

The decision comes after the agency's 2011 review of the eastern cougar's status and a 2015 proposal to delist the subspecies.

The U.S. Fish and Wildlife Service predicts the eastern cougar likely went

extinct at least 70 years ago. According to the agency, the last genuine records of eastern cougars are believed to be from Maine in 1938.

Eastern cougars were likely predominantly wiped out in the 1800s, killed by fearful humans, destruction of habitat and a decline in white-tailed deer populations, a primary food source.

Nonetheless, the agency reports that local and federal biologists receive hundreds of reported cougar sightings a year in the East. While many sightings are misidentified species such as bobcats, cougars of other subspecies that have migrated or escaped captivity occasionally appear in the region.

— Ashley Goodman

N.C. Rock Faces Closed to Protect Falcons

Nine rock faces in North Carolina national forests will be closed to recreational activities through Aug. 15 in order to protect rare peregrine falcons' nests, according to the U.S. Forest Service.

Peregrine falcons typically nest on tall cliff ledges, and the Forest Service warns that disturbing prohibited areas may cause peregrine falcons to abandon their usual nest sites and potentially fail to nest until the following year. Additionally, newly hatched falcon chicks who cannot yet fly may run off cliff edges to escape danger.

North Carolina wildlife biologists have been working to restore peregrine falcon populations since the 1980s, and nesting success may be one of their

greatest challenges to population recovery, according to the agency's January announcement.

The new restrictions, updated after falcon monitoring in 2017, will be in effect from Jan. 15 through Aug. 15 every year through 2020, when the closings will be reevaluated.

Closed rock faces include: White-rock Cliff and Buzzard's Roost in the Appalachian ranger district, N.C. Wall and Shortoff Mountain and Big Lost Cove Cliffs in the Grandfather district, Pickens Nose (east face) and Whiteside Mountain in the Nantahala district, and the north faces of Looking Glass Rock and Cedar Rock in the Pisgah district.

— Ashley Goodman

Sanctuary for Research Chimpanzees Opens Outdoor Habitat

In January, nonprofit chimpanzee sanctuary Project Chimps opened their outdoor, six-acre Peachtree Habitat to 15 apes that had spent their entire lives indoors in captivity for biomedical research.

"This was the first time in their lives that these chimpanzees could exercise their free will with regard to their environment," Ali Crumpacker, executive director of Project Chimps,

said in a press statement.

In November 2015, the National Institutes of Health decided to no longer fund experiments involving chimps due to a 2015 ruling from the U.S. Fish and Wildlife Service that classified all chimpanzees, both wild and captive, as endangered.

Project Chimps was founded to supply former research chimpanzees with a 236-acre sanctuary in northern

Georgia's Blue Ridge Mountains.

The group expects to receive more than 200 chimpanzees from the University of Louisiana's New Iberia Research Center in the next few years, with 31 chimps transferred to their sanctuary to date. The organization plans to build three additional outdoor habitats with accompanying indoor housing. — Shelby Jones

East Tennessee Historic Park Wins State Award

The Sgt. Alvin C. York State Historic Park in Pall Mall accepted the 2017 Tennessee State Park of the Year award.

The Tennessee Department of Environment and Conservation said the park was recognized for "the exceptional visitor experience offered through living history programming."

Through partnerships with the WWI Centennial Commission, Center for Historic Preservation and National

Historic Landmarks Program, the park presented 1,200 programs in 2017. These programs include six on-site daily tours, historical learning and experiential WWI programs.

The park provides a short hike to the York gravesite, fishing on the Wolf River, a visitor center designed after a local general store, a gristmill, York's childhood Bible school and various picnic facilities.

York was drafted into the war in 1917 and assigned to the Meuse-Argonne Front in France in 1918. During his patrol, York led soldiers through an ambush behind German lines, capturing four officers and 128 soldiers.

He received more than 40 awards upon his return, including the Congressional Medal of Honor. The farm and home at the park today were given to him in 1922 by the Nashville Rotary Club. — Shelby Jones

W.Va. Teacher Strike Leads to Salary Increase

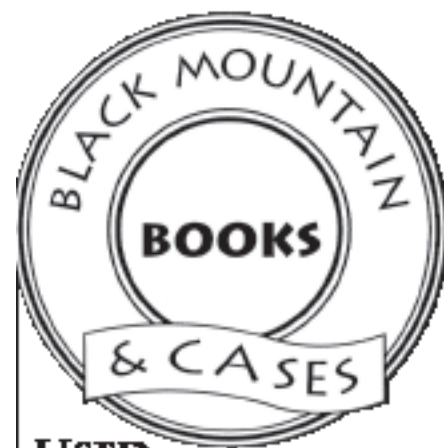
West Virginia public schools closed for nine school days in February and March as school staff and supporters, motivated by demands for better wages and benefits for teachers, took to the capitol in Charleston. According to the National Education Association, an average West Virginia teacher's salary

is \$45,701, compared to a nationwide average of \$58,950.

The protests led the legislature and Gov. Jim Justice to give state personnel a 3 percent raise and school employees a 5 percent raise for the coming school year. This came after Justice's proposal of a 2 percent raise for the next year followed

by two years of 1 percent raises did not end the strike. Before the walkouts, the state Senate had also passed a bill to give teachers a 1 percent raise each year for five years.

After the strike, the governor created a task force to examine the union's concerns about the state employee health insurance program. — Shelby Jones



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Hiking the Highlands

Journey to Rainbow Falls at Jones Gap State Park

By Hannah Gillespie

One of my first memories at Jones Gap State Park was testing the pH of the Middle Saluda River on an elementary school field trip. This nature-based education made an impression, furthering an appreciation of the outdoors my parents had instilled in me. Our class trip was part of the Discover Carolina program, which provides education on forest and river ecology for South Carolina public schools.

For me, this was one of many trips to the park. Jones Gap was only 20 minutes away from my family's home in north Travelers Rest, S.C., and it became our favorite spot for hiking, camping and photography.

The 4,246-acre park is located in Cleveland, S.C., near the North Carolina-South Carolina border, and attracts 60,000 visitors every year. Naturaland Trust, a land conservancy started by environmentalist Thomas Wyche, acquired the land to form Jones Gap State Park in 1979. According to Park Interpreter Tim



A mountain laurel blooms in April. Photo courtesy of John Gillespie Photography, LLC

Lee, the park was named for Solomon Jones, who surveyed and built the Solomon Jones Toll Road that provided passage up the mountain from the 1850s until 1925.

In December, The Nature Conservancy bought 955 acres of private land within the Mountain Bridge Wilderness Area, a stretch of land comprised of two state parks, including Jones Gap, and private woodlands. The conservation group plans to transfer the new acreage to the park to provide opportunities for additional parking and trails. The current parking lot fills up quickly on weekends and holidays.

"The additional acreage will move us one step closer to completing the vision of conserving the mountain 'bridge' connecting the Poinsett Reservoir and the Table Rock Reservoir," says Lee. This will preserve and protect over 13,000 acres from development.

Trek to the Falls

To reach the stunning Rainbow Falls, leave the parking lot after collecting a park passport to follow the trail past the Jones Gap Learning Center and across the wooden bridge. When you reach the trailhead, register using the information sheets located below the trail map. Please note that the trails close one hour before dark year-round.

Afterwards, keep straight and fol-



Rainbow Falls, above, flows into the Middle Saluda River, left, at Jones Gap State Park. Photos courtesy of John Gillespie Photography, LLC

low the blue trail blazes on the Jones Gap Trail. While I've seen all ages on this trail and it's not as strenuous as others in the park, watch your feet as it can be quite rocky. On a pleasant day, this part of the trail can be crowded.

If you need a break, there is a beautiful miniature waterfall off to the far left of the trail. Make sure to check out the campsites and the Middle Saluda River, which the trail winds around. You will also cross a number of small creeks on your journey, so pack appropriate footwear.

When the Jones Gap Trail diverges about a half-mile in, keep to the left and follow the red blazes marking the Rainbow Falls Trail. The steep trail features a number of rocky staircases and gains 800 feet in elevation over the next 1.6 miles en route to the waterfall.

The main attraction is the 100-foot Rainbow Falls, which used to only be accessible through the strenuous Camp Greenville Trail. According to Park Ranger Michael Watkins, who helped build the new trail, it was completed in 2008 after five months of work.

There are more than 600 species of vascular plants, 44 species of mammals, 168 species of birds, 19 species of salamanders, 20 species of reptiles and over 1,000 species of invertebrates known to be living within the park, according to Lee. He recommends visiting in April and May as it's the prime season for wildflowers.

As my father and I hiked the trail in late February, he identified plants along the way, including a little wild blue violet, mountain laurel, Christmas

fern and wild ginger.

This area is part of the Southern Blue Ridge Escarpment. According to The Nature Conservancy, the escarpment supports 40 percent of South Carolina's rare plant and animal species — including the mountain sweet pitcher plant, native brook trout and peregrine falcon.

We could tell we were approaching the falls when we started to hear its boisterous roar. We took a seat on one of the many rugged boulders near the river to take in the beauty of the falls and enjoyed a break before making the descent. ♦

The Hike to Rainbow Falls

Length: 4.2 miles, out and back

Difficulty: Strenuous

Directions: From U.S. Route 276, turn onto River Falls Road for 4.6 miles until it becomes Jones Gap Road, and continue for one mile.

Amenities: Camping with permit, fishing, fish hatchery, gift shop, geocaching, over 60 miles of hiking trails, two waterfalls and Discover Carolina, a curriculum-based science education program for South Carolina school children

Events: The park's annual Wildflower Walk will be held on April 14, 2018, from 10:30 a.m. to 12 p.m.

Fee: \$5 adults, \$3.25 seniors, \$3 children, free under 5

Park Hours: 9 a.m. - 6 p.m.

Contact: Call Jones Gap State Park at (864)-836-3647, or visit southcarolinaparks.com/jones-gap



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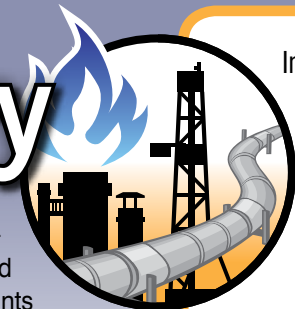
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The Rising Menace of the Fracked Gas Industry



From beginning to end, shale gas extraction brings heavy industry and its accompanying pollution into direct contact with natural areas, family farms and residential communities.

People living near drilling or waste disposal sites, pipelines and other industrial gas-processing facilities contend with issues such as personal safety risks, hazardous air emissions, ground and surface water contamination, clearcuts to nearby forests, and blasting to make way for pipelines. The recent construction of a petrochemical facility that could become the first

of many, combined with the industry's plans for a potential underground storage hub for natural gas liquids, could mean further encroachment on residents of Appalachia and the Southeast.

Incidents like the fracking well explosion in Ohio this February, which led to the evacuation of 100 residents, can and do occur, and people who live near fracking operations and pipeline routes report frequent violations of environmental and safety standards. On the following pages, we hear from experts, advocates

Impacts of Fracking p. 8
 Toxic Frack Waste p. 11
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and citizens on the front lines of this expanding industry. One thing is clear: for a substance that's invisible, fracked natural gas has an enormous footprint.



Overwhelmed As fracking and related infrastructure expand, so does the industry's impacts on local residents

By Dan Radmacher

Living in an area where hydraulic fracturing — fracking — is taking place can feel like living under an invading force, according to Bill Hughes, a longtime resident of Wetzel County, W.Va., who ended up becoming a sort of documentarian of the fracking industry as it ramped up in the county beginning around 2011.

One of the keys to understanding what's coming, according to Hughes, is paying attention to the surveyor's stakes that dot the sides of the roads and other areas where drilling or pipeline activity is imminent.

"Always look for them," Hughes says of the wooden stakes with different colored strips of cloth hanging from them. "That is the Roman army's pre-invasion marker. Stake in the dirt, guys, this is where we're going to work on conquering next. This is our warning to you. Be on guard."

The stress of living in a fracking region is palpable to a visitor. Even though evidence of constant patching and repairs is clear, roads are crumbling and pockmarked. The first several miles

of Sistersville Pike running north out of West Union, W.Va., are a cratered mess. Potholes in the pulverized road can be several feet wide — and several feet deep. The speed limit may be 55 mph, but a driver would be foolish to drive above a moderately slow crawl.

Even though drilling activity is somewhat depressed currently due to low gas prices, industry traffic remains heavy. Convoys of tanker trucks carrying fracking chemicals or wastewater roar around narrow, curving roads. Other trucks deliver huge sandboxes to the drilling pads where the sand will be mixed with water and chemicals to help fracture shale formations 9,000 feet below the ground to release the gases long trapped within.

Still other trucks carry heavy earth-moving equipment to clear land for pipe yards and well pads or widen narrow country lanes for access to pipeline routes or drilling locations.

Large industrial facilities popping up all over hilly terrain — extraction plants, wastewater treatment plants and compressor stations — run 24/7, with constant noise, harsh lights and air

pollution emissions that hang over the valleys. Freshly cut trees litter hillsides along countless right-of-ways being prepared for pipelines.

Hughes spends a lot of time driving around Wetzel County in his four-wheel-drive truck, keeping tabs on new fracking activity and tracking the progress of construction of well pads and pipelines in thousands of photographs. He plugs information into Google Earth, charting the paths of pipelines and the locations of other facilities.

"The people who live here didn't sign on for this," says Hughes. "When we moved here from Pittsburgh 40 years ago, we didn't sign up for this, either."

Tina Del Prete also moved to the area about 40 years ago. She grew up in New Jersey and always wanted to live on a farm. She and her partner own 30 acres and a 100-year-old house in Doddridge County, W.Va. The Mountaineer Xpress Pipeline is going through not far from her home.

"My American dream has been turned into a living nightmare," she says. "The gas companies treat the people who live here like we're in the way."

In 2016, 3,000 gallons of chemicals spilled at this MarkWest gas processing complex in Wetzel County, W.Va., and into a creek upstream from a public drinking water intake. Photo by John Farrell

The impact from fracking is much larger than the conventional drilling that people in this part of West Virginia were so familiar with.

"When I started in the industry in the early 2000s, if someone leased their farm, the company carved out maybe a half-acre well pad with a dirt road," says Justin Raines, a former oil and gas industry worker who is now chairman of the West Virginia Chapter of the Sierra Club.

"You'd end up with a small piece of pipe and a 50-barrel tank out in the woods," he says. "In the modern era, when a farmer leases the farm, they pretty well lose the use of that entire farm. You've got a 10-to-20-acre well pad, a large frack pond, a paved road. Looking at it from an aerial view, the impacts are like a miniature mountaintop removal mine."

Hydraulic fracturing as a drilling technique has been around for well

Continued on next page

Overwhelmed

Continued from previous page

over a century. But when it was combined with horizontal drilling techniques in the 1980s to extract natural gas trapped in shale formations, production began booming — along with the environmental footprint of natural gas operations. Fracking first took off in Texas and Oklahoma, but soon spread to other areas.

The huge Marcellus Shale Formation that lies under much of Appalachia was created 350 million to 400 million years ago during a mass extinction event when the area was a large underwater basin.

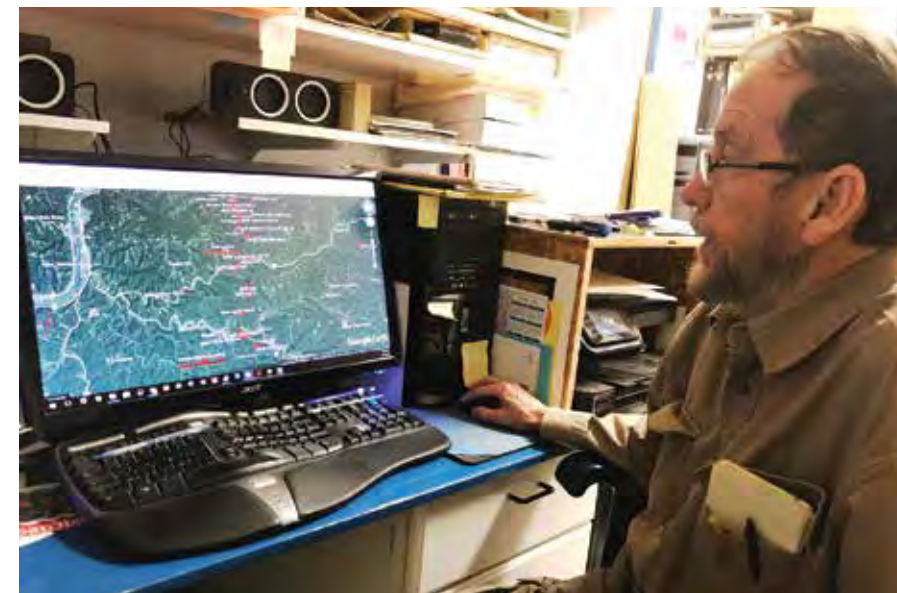
Fracking allows the natural gas that became trapped in tiny pockets as the shale formed to be economically recovered by breaking up the rock and releasing the gas. Natural gas production in Appalachia has soared in recent years as fracking has spread from Pennsylvania to West Virginia and Ohio.

According to the U.S. Energy Information Administration, natural gas production in Appalachia from the Marcellus and Utica shale formations has nearly tripled since 2012, increasing from 7.8 billion cubic feet per day in 2012 to 23.8 billion cubic feet per day in 2017. An EIA article published in August 2017 forecasts that the pipeline infrastructure and other natural gas processing facilities planned for Appalachia will lead to even more production in the future.

According to Hughes, that will likely take the form of additional wells on existing pads rather than incursions into new areas, at least in the near-term. "It's a lot less expensive to put a new well on a pad that's already been developed," he says.

An underground natural gas liquids storage hub proposed by Appalachian Development Group could spur \$36 billion in new chemical and plastics industry investment, according to developers, and drive even more gas production.

Fracking activities are concentrated in north-central West Virginia, eastern Ohio and southwestern Pennsylvania, but some fracking is also happening in parts of Kentucky and Virginia. In New York, Gov. Andrew Cuomo banned fracking in 2014. The Maryland legislature passed a ban in 2017, though the



Bill Hughes of Wetzel County, W.Va., keeps tabs on the expansion of fracking and related gas pipelines and facilities in his part of the state. Road damage from frequent truck traffic, above, is common in the county. Photos by Dan Radmacher

state has permitted fracked-gas pipelines originating elsewhere.

New Technique, New Problems

Pennsylvania was the first Appalachian state to see hydraulic fracturing, and Ron Gulla saw one of the first horizontal wells go in on his farm in Washington County. The lease he signed didn't mention horizontal drilling or the Marcellus Shale. "The whole thing was so dishonest and so corrupt, it's just unbelievable," he says.

Gulla has been tied up in litigation with the drilling company for years. After the water in his three-acre pond turned black and all the vegetation died, Gulla blamed the drilling for contaminating the water. Gulla ended up moving from his farm into his parents' house.

People in Washington County were excited about fracking when it first started, according to Gulla. "A lot of people thought they hit the Powerball," he says. "They didn't realize that once you start drilling, now you've got collection lines, compressor stations, all the infrastructure that goes along with this."

The infrastructure damage has been extensive. "It's like a bomb went off," he says. "They're destroying everything around here with all the heavy truck traffic. People are not happy here now. They've industrialized the whole area. Some people are trying to get the hell out of here, and they can't. Most people are sick of what's going on. Sick of seeing all the pipelines, the drill sites, all the flooding and mudslides taking place."

John Stolz, the director of the Center for Environmental Research

and Education at Duquesne University, began researching the impact of fracking after he attended a Pennsylvania Department of Environmental Protection hearing about a change in regulations for discharges from public wastewater treatment plants.

"It turns out the rivers around Pittsburgh were getting saltier because there was so much drilling activity," Stolz says. This was driving wastewater treatment plants out of compliance with U.S. Environmental Protection Agency regulations. Wastewater from fracking is highly salty, both from the salts added to the fracking fluids and the salts released from the shale when it is fractured. The salt was reacting in the river water to create trihalomethanes, a chlorine byproduct linked to some negative health effects.

Stolz met Gulla at a public hearing, cementing his interest in the impacts of fracking. "I visited him on his farm, and I haven't looked back," Stolz says. "They completely took over his farm."

Stolz says he's been "completely blown away" by the duplicity of the

leasing and drilling companies. "They'll tell you the wells last 50 years," he says. "But we've got more than a decade of data. They produce most of what they're going to produce in three to five years. In 10 years, they'll be gone and the wells will be capped."

Royalties are paid based on production, so fewer years of production cuts into the amount of revenue landowners receive. Gulla points out that many companies began deducting a portion of post-production expenses from royalties, further reducing the landowner's share.

Some fracking proponents — like Sen. James Inhofe, R-Oklahoma — insist there hasn't been a single case of water contamination from the procedure. Stolz disagrees.

"You have to dig to find out how many gag orders are out there, how many settlements there've been," Stolz says. "I've been involved with at least three different cases settled with a gag order. The families' kids couldn't even talk about it."

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Appalachian Energy Center
APPALACHIAN STATE UNIVERSITY

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Overwhelmed

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Attempting to prove that fracking operations contaminated a water source is complicated by the legacy of extractive industries in these areas, according to Stolz. “There were already thousands of holes in the ground before these guys started, and thousands of mines,” he says. “So when we look at the water contamination, they can try to trace it back to other sources — never mind that there wasn’t a problem prior to the new activity.”

The health impacts from fracking contamination — and from air pollution and other problems associated with the industry — aren’t totally clear, but studies showing cause for concern are beginning to accumulate, according to Stolz.

“The most recent studies show correlations to low birth weights and higher infant mortality,” says Stolz. “Industry came out with a statement questioning the study because researchers didn’t consider drug addiction, tobacco use and alcohol abuse, which, of course, the researchers had controlled for. It’s an insult.”

The studies Stolz refers to have found that infants whose mother lived within one kilometer of a well were 25 percent more likely to have low birth weights. Mothers living near fracking operations were also more likely to give birth prematurely. Another study found increased infant mortality in the five most heavily fracked counties in Pennsylvania.

Air pollution caused by fracking has also been linked to unhealthy concentrations of smog and other contaminants.

Money Talks

Not everyone who lives in fracking country is opposed, though. Dawn, a longtime Doddridge County resident who didn’t want her real name used because she fears retaliation from the industry, said that for some people, the money coming into the county makes up a bit for the disruption — but not for her.

“I don’t have mineral rights; no money there for me!” she says. She understands, though, why some people will try to profit if they can. “Some folks have decided to make lemonade

out of the lemons. They set up RV parks for the man camps [temporary housing for out-of-state gas workers] or rent out rooms. People might not like what’s going on, but they don’t necessarily speak up publicly. When this started happening, lots of people thought this was just fantastic. They looked at it as a money-making proposition.”

Lissa Lucas, a candidate for the West Virginia House of Delegates from Ritchie County whose February ejection from a committee hearing on a gas bill went viral, says property rights are important even to those who are employed in the industry.

“People around here are not opposed to drilling in general, but they want to be able to control where it happens,” she says. “They want the 40 acres around their house not to have a frack pad on it.”

Lucas is concerned that, once more, political leaders are looking at easy, short-term revenue and ignoring the region’s long-term needs. “What’s frustrating to me is that we don’t seem to be taking any steps to make sure that West Virginia is a better place for the future,” she says. “Fossil fuels are a finite resource. They just are.”

Industry promises about jobs are largely empty, according to Lucas. “Companies keep saying this will bring in jobs, but the crews are from Texas and Oklahoma,” she says. The Antero Clearwater treatment plant and landfill in Doddridge County is a case in point, according to Lucas. “The frack dump wasn’t built by local people,” she says. “In a year or two, those crews will go home or on to the next job, and we’re saddled with a 500-acre toxic dump with a 30-year landfill liner.”

The Sierra Club’s Raines says the lack of economic diversification makes fighting fracking more difficult. “It’s hard for people to resist because there’s so little going on economically,” he says. “People have been conditioned to accept a certain amount of destruction in order to put food on the table.”

Like Lucas, April Keating, president of Mountain Lakes Preservation Alliance, worries current



Another well pad is under construction on a ridge in Wetzel County, W.Va., above. At left, surveyor stakes mark new gas infrastructure in Doddridge County, W.Va. Photos by Dan Radmacher

politicians are ignoring the problems. “No one’s listening to us,” says Keating. “We’re just tree-huggers trying to get in the way of com-

merce. But we’re not. We just want to try something else besides extraction. Amazon and Google don’t want to come to a place that doesn’t have green energy. Tourists wouldn’t come here if they knew what they were falling into when they went rafting.”

Some places are working to stop fracking before it starts. Late last year, Westmoreland County, Va., enacted zoning regulations to strictly limit fracking. Under the new ordinance, fracking would only be allowed by special exception in planned development districts, and only after drilling companies complete applications addressing traffic and noise impacts, as well as the effects on water and county infrastructure.

“The Planning Commission went

into a lot of detail in order to make it as hard as possible to get a permit to drill,” county supervisor Russ Culver told the Fredericksburg Free Lance-Star.

Yet this particular ban just applies to Westmoreland County — fracking is underway elsewhere in Virginia. And both Maryland, which has banned the drilling practice, and Virginia have permitted fracked-gas pipelines.

In Doddridge County, Dawn doesn’t really see the point of speaking up anymore. “It doesn’t matter what you do or what you say, because they’re going to do whatever they’re going to do,” she says. “You don’t get a lot of support from the local leadership in the community. They just look at the dollar signs, the tax income generated from the increase in commercial activity. Some of the people in charge have right-of-ways or leases themselves. They’re making money off of it.”

And, she fears, it may just be too late. “I think we’re past the point of no return,” she says. “The amount of soil surface disturbed, infrastructure damage, aquifer pollution, the destruction of the sense of community we used to have here ... I don’t know that there’s any coming back from all of that.”

Del Prete also doesn’t see a way for the community to recover. “I don’t know what the answer is,” she says. “I don’t know if there’s any help. People come here and see what’s going on and go back to their state to fight it off. Then they forget about us.” ♦

Fracking in Wayne National Forest

Oil and gas drilling leases on two parcels of Southeast Ohio’s Wayne National Forest were auctioned on March 22. The 345-acre sale was the forest’s first of 2018; four auctions were held in 2017.

In February, the U.S. Forest Service announced it will revise its land-management plan for Ohio’s only national forest. This follows a lawsuit initiated by several conservation groups that challenges the leasing of Wayne National Forest land for fracking.

Public meetings for the new planning process were scheduled for late March and early April.



CC-SA image by ChaseRokit

Appalachia’s Toxic Dumping Ground

By Lorelei Goff

Twenty-four hours a day, seven days a week the trucks stream through eastern Ohio’s rolling landscape along Highway 5. Most come from West Virginia and Pennsylvania. All bear a placard with the designation “BRINE,” which doesn’t begin to describe the toxic, radioactive liquid slipping past motorists.

Felicia Mettler, a local resident, counted 108 brine trucks in one 24-hour period in 2016 at the K&H fracking waste injection well site in Torch, Ohio. The town is so small it doesn’t have a grocery store, but it’s home to one of the largest injection well sites in the state.

The underground injection wells store waste produced during the process of fracking, a shale gas extraction technique that forces fluid laden with heavy metals and other contaminants underground to fracture rock and free trapped oil or natural gas.

The K&H site’s three wells received 2.16 million barrels of frack waste in 2016. That figure more than doubled to 4.42 million barrels in 2017.

Each barrel contains 42 gallons, making a staggering 185.57 million gallons injected last year at the K&H site alone. In total, Ohio dumped 36.26 million barrels in 2017, the equivalent of 2,307 Olympic-sized swimming pools. Roughly half of that was shipped from Pennsylvania and West Virginia.

According to the U.S. Environmental Protection Agency, there are more than 38,000 Class II disposal wells, which specifically take fracking waste. Most of these wells operate in Texas, California and Oklahoma, but Ohio is also among the top five states.

Ohio has minimal regulation and disposal fees — 20 cents per barrel for out-of-state waste and 5 cents for in-state. Once a well reaches 500,000 barrels, all subsequent waste is free.

“Ohio has become [Appalachia’s] dumping ground for toxic waste,” Mettler says. “Most of the [fracking] waste comes from out of state. West Virginia and Pennsylvania are where we get most of the waste from. It’s just sad that you hear people say, ‘Oh, Ohio, that’s the new toxic toilet bowl.’”



The community organization Torch CAN DO is campaigning to get the Ginsburg frack waste site, above, closed and plugged. Photo by Roxanne Groff

The most recent figures calculated by the environmental group FracTracker Alliance show that Ohio has roughly 245 active Class II disposal wells and 35 proposed wells. Several hundred proposals to convert other wells to Class II wells are under consideration.

Pennsylvania, by contrast, currently operates five Class II wells but the state has approved additional wells and has other permits pending.

As of 2016, West Virginia had 62 active Class II disposal wells.

Felicia Mettler doesn’t know exactly what’s in the waste. A clever use of patent law allows the oil and gas industry to keep the ingredients of fracking fluid a proprietary secret, and companies are exempted from certain federal regulations in the Clean Water Act, the Safe Drinking Water Act, the Superfund program and other environmental laws.

What is known is that fracking fluids can contain any of hundreds of toxic chemicals, heavy metals, corrosive salts and radioactive materials, many of which are carcinogenic and can cause genetic mutations or harm the central

Just the sight of the endless stream of trucks can be overwhelming at times for Torch, Ohio resident Felicia Mettler. “I cannot pull out on the highway without seeing all of these trucks and knowing that all of this toxic waste is coming to my community and there’s nothing that I can do about it!” she says. Photo by Lorelei Goff

nervous system.

As the fluid is forced hundreds or thousands of feet into the Earth’s crust, it picks up salts — hence the designation “brine” — and radioactive particles from radium and radon.

According to the online water information site Water and Wastewater International, up to 60 percent of the brine then flows back up the fracking well shaft with the gas and is separated. The fluid is sometimes re-used, further concentrating it.

The waste is then transported to injection wells or landfills, and some is sold to highway departments to suppress dust or ice on roads.

The Local Price Of Corporate Profits

Before 2015, Felicia Mettler’s in-laws Phyllis and Ron Rienhart didn’t pay much mind to K&H, a facility with holding tanks and a guard shack just across the road. But when they started noticing loud noises, strange odors, tremors and unexplained ripples in their birdbath on windless days, the Rienharts suspected the K&H site might be the cause of the strange events.

They were shocked to learn that K&H was a frack waste injection site and was likely causing the tremors the Rienharts felt.

That’s when Mettler, who had previously been a strong supporter of fracking, became what she calls “an accidental activist.”

“I didn’t completely understand fracking,” Mettler says. “I just understood that we need gas and we need oil and so therefore I supported fracking. After learning about injection wells and frack waste and fracking, I immediately understood that this is not a good thing.”

“All of the laws surrounding frack waste and injection wells in the state of Ohio support the industry,” she adds. “They do not protect citizens.”

That realization left Mettler feeling like her community was being marginalized.

“We’re just country folk,” she says. “We don’t matter. We can be sacrificed. It’s horrible.”

Continued on next page



Toxic Dumping

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The situation compelled the stay-at-home mom to found Torch CAN DO, which stands for Clean Air Now Defend Ohio, to educate others and push for better regulation of the industry.

Mettler is concerned about explosions, which have occurred after lightning struck wells in Oklahoma and Texas.

“Salt water shouldn’t explode,” Mettler says, referring to the fluid’s designation as brine. “Torch would be devastated.”

Ron Rienhart fears becoming an environmental refugee.

“My concern is, if this stuff starts coming up or one of these tanks over here blows up, are they going to contaminate this area to the extent that nobody can live here?” he asks. “Where does a little town go? We’ve got no options.”

K&H has been the source of several toxic spills. In 2015 — the same year that roughly 8,000 gallons of frack waste spilled in Vienna, Ohio, destroying two wetlands and a pond — 15 tons of contaminated soil was removed downhill from K&H after a spill there. Soil contaminated by frack waste is supposed to go to EPA-approved landfills.

Last November, a brine truck overturned a couple miles from the facility, dumping roughly 1,500 gallons of frack waste into a culvert that leads to White’s Run stream, which feeds the Ohio River.

Torch CAN DO member Suzie Quinn took water samples from the creek nine days after the spill had been cleaned up. Her tests showed that even after the cleanup, the culvert’s conductivity — a measure of salt and other contaminants — was about twice that of an upstream sample.

The seriousness of the spill was made clear when Quinn’s hand started burning after taking the samples. After profuse rinsing, it eventually faded to a tingling and stopped.

The group is also concerned about the area’s groundwater, especially since the state doesn’t monitor it.

In a June 2015 letter, Tupper Plains-Chester Water District General Manager Donald Poole told the district’s customers it couldn’t adequately test for frack waste contamination



Fighting Back

Citizens and environmental groups have experienced successes and setbacks in opposing frack waste.

Ohio: In 2016, public pressure effectively stopped a Coast Guard proposal that would have permitted the shipping of frack waste on the Ohio River and other inland rivers and intercoastal waterways. According to a report by EcoWatch, more than 98 percent of the public comments submitted were opposed to the plan. More than 100 organizations pressed the Coast Guard to drop the proposal.

West Virginia: In August, a federal appeals court rejected the effort of Fayette County, W.Va., officials to institute a ban on frack waste disposal in the county. The court ruled that state

legislation precludes the rights of counties to enact bans contrary to permits granted by the state. The county implemented the ban after citizens and officials found cause for concern regarding potential drinking water contamination.

New York: Beginning in 2011, more than 100 communities in New York implemented bans on fracking and storage of frack waste, using home rule to trump more lax state laws, according to Karen Edelstein with FracTracker, an environmental group that tracks the fracking industry. “That’s turned out to be a pretty good thing because there’s a fair amount of conventional, and probably unconventional, fracking waste that is sent to New York state for road spreading,” says Edelstein. The governor of New York implemented a statewide ban on high-volume hydraulic fracking in 2014.

Across the Nation: On May 14, a Permanent Peoples’ Tribunal Session on Human Rights, Fracking and Climate Change will convene in Oregon to formulate advisory opinions as to whether lawmakers have disregarded human rights in allowing fracking and injection wells. The international, independent human rights tribunal will take the findings to several United Nations organizations. Preliminary tribunals were held in Athens and Youngstown, Ohio, Charlottesville, Va., and Australia. “This is the first time in a year that I’ve felt like there is some hope,” says Felicia Mettler, a Torch, Ohio resident and founder of Torch CAN DO, a co-sponsor of the tribunals. “I am hoping that the United Nations will be able to step in and slow this down, stop this, and examine this better.”

Kentuckians Advocate for Removal of Illegal Waste in Landfill

The Concerned Citizens of Estill County, Ky., held a public forum on Feb. 12 to discuss waste collection company Advanced Disposal’s proposed plan to contain radioactive waste illegally dumped in the Blue Ridge Landfill in Irvine.

Approximately 47 truckloads of oil and gas production waste from West Virginia, and additional oil production waste from Ohio, was dumped in the landfill in 2015, according to an agreed order between Advanced Disposal and the Ken-

tucky Energy and Environmental Cabinet. The forum was held the day after the 30-day comment period on Advanced Disposal’s proposal ended. At the meeting, the citizens group announced that it submitted a plan to the cabinet advocating for the waste’s removal.

“It’s unjust to now burden this community with this uncertain level of risk going forward,” Mary Cromer, an Appalachian Citizens Law Center attorney working with the Estill County group, said

at the forum.

Advanced Disposal’s proposed plan would leave the radioactive material in place with a temporary cap, radionuclide monitoring and moving methane wells. Their alternative plan, preferred by the citizens group, would require moving the waste to a more suitable landfill in Pennsylvania, an action Advanced Disposal says may pose health risks to workers and community members. — *By Ashley Goodman*

One County, Eight Wells, Billions of Barrels

K&H isn’t the only injection well site in Athens County.

In 2017, the county ranked second in the state for the amount of frack waste it took in, according to figures compiled by the Buckeye Environmental Network. Neighboring Washington County ranked first.

That year, Athens County received 465,221 barrels of in-state fracking waste and over 4.72 million barrels from other states.

Mettler’s home is 10 miles downhill from the Atha injection well, which

sits by a cornfield and across the road from the Hocking River, a tributary of the Ohio River. She estimates the storage tanks are located roughly 500 feet from the water.

A 40-minute drive away in Athens, Ohio, an open waste pit about the size of a backyard swimming pool sits at the now-idle Ginsburg injection well. A three-sided chain link fence with a chain strung between two posts is the only barrier to the wellhead, where machinery sits rusting amid overgrown weeds and grass.

It is one of two open pits out of the county’s eight total frack waste sites, six

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Frac Sand Mining in Appalachia

By Ashley Goodman

A step in oil and gas extraction that often goes unseen is the mining of frac sand, a necessary component in the fracking process.

Frac sand is a high-purity silica sand made from durable, rounded quartz grains. Silica sand mining is underway at quartz formations across the country.

In fracking, wells are drilled into oil-laden rock shales, and water laden with chemicals, thickeners and sand is pumped into the wells at high pressure, creating expansion and fractures in the rock.

This is where frac sand comes in. When the water flow stops, the cracks in the rock deflate and are propped open by millions of grains of frac sand. These porous cracks allow oil and gas to seep through the cracks and fill the wells.

Though frac sand mining is most common in quartz-rich regions like

Wisconsin, areas across Appalachia are also home to frac sand mines.

The FracTracker Alliance, an organization that studies and communicates the risks of oil and gas development, estimates that almost 50 frac sand-related facilities operate in Kentucky, Maryland, North Carolina, Pennsylvania, Tennessee, Virginia and West Virginia.

One prominent frac sand mine in Appalachia is Short Mountain Silica Co., located in Mooresburg, Tenn. Short Mountain Silica is a quarry that spans 452 acres, according to its 2017 state water pollution permit.

According to its website, Short Mountain Silica has been mining and manufacturing silica products since 1988 and began producing frac sand in 2012.

Tony Poole works as chief engineer at the PBS WETP-TV tower, located on Short Mountain Silica Road. Poole esti-



An aerial view of Short Mountain Silica’s operation in Hawkins County, Tenn. Accessed via Google Maps, March 20, 2018

Poole has heard stories from coworkers about problems with the mine years ago. Explosives would unearth rock formations, which sent debris flying and damaged the nearby road, and dust and noise pollution was a much larger problem. According to Poole, his colleagues estimate that these issues were mostly resolved about 10 years ago.

What worries Poole today, however, is the habitat destruction the expanding mine has caused.

“There’s a lot of cougar or wildcats running around up there, and lots of deer up there, and you haven’t seen them in a few years,” Poole says. “Wildlife is just disappearing.”

Short Mountain Silica did not respond to requests for comment. ♦

mates that the tower is a mere 600-700 feet from the mine.

In his seven years working at the tower, Poole says he has watched the mine grow. The mine has become increasingly close to the transmit tower, and he has seen expanses of forest disappear.

Toxic Dumping

Continued from previous page

of which are in operation including the other open pit.

Though the metal-lined containment tank hasn’t received any waste for two years, the oily, acrid substance sits open to the air along the roadside in a residential area.

Bert Ashcraft lives close to the Ginsburg site, where a state inspector told him to report any dying grass or leakage around the pit. Though he can smell it when the wind blows toward his house, he says he is not concerned because he believes it’s just salt water.

Asked if he would feel differently if he knew it contained hazardous chemicals, he says, “Maybe, if I knew more information about it, I might. If they’re labeling that as just brine, then that should be changed.”

Earth-Shaking Consequences

Charles Mansfield, a civil engineer, lives behind the Ginsburg pit. He says he is aware there have been “some minor earthquakes” since fracking started and that many people have voiced concerns about groundwater contamination.

“There’s faults and you can’t, without a lot of underground investigation,



Tanks hold fracking waste at the K&H injection well site. Photo by Lorelei Goff

ground where you have these caustic chemicals reacting with it. And quite often, right from the beginning on the vertical wells, there’s typically about a 6 percent failure rate where they don’t get

a good seal with the cement.”

Beiersdorfer explains that the porosity of rock determines the ability of fluid to flow through rock.

“Sometimes a fault will actually seal things off but the broken-up rock in a fault zone will act as a conduit,” he says, noting that caverns allow fluid to migrate more quickly.

Beiersdorfer also says the earthquakes are more than a minor problem. This area of Ohio, which never experienced quakes prior to fracking and injecting, has had about a thousand since 2011, including a magnitude 4.

In December 2010, operators began injecting waste underground in the Northstar #1 well in Youngstown. The quakes began in January of 2011. For eight and half months, Beiersdorfer says, the Ohio Department of Natural Resources denied that they were related.

“My 80-year-old neighbor saw the connection,” he says. “My freshmen students saw the connection. There was a connection in time. There was a connection in space.”

He says state regulators finally succumbed to public pressure and had four portable seismometers set out to monitor the site in 2011. That Christmas Eve, it registered the 4.0 magnitude quake with an origin in close proximity to the bottom of the well. The Northstar #1 well was subsequently shut down. It caused more than 500 quakes, according to Beiersdorfer.

In the Niles-Weathersfield area of Trumble County, information about quakes was kept from the public, according to Beiersdorfer, until one large enough to register on the U.S. Geological Survey Regional Network occurred in 2014. The public later learned that there had been 108, including a series of quakes on a second, pre-existing fault.

Beiersdorfer says the USGS determined that the amount of fluid injected is proportional to the amount of seismic energy that must be released. That energy could be released in a thousand tiny earthquakes or one or two big ones.

Beiersdorfer used the USGS model

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Pipelines Advance Despite Setbacks & Resistance

By Brian Sewell and Molly Moore

With permits issued and construction activities underway, controversy continues to follow major natural gas pipeline projects in Appalachia. Lawsuits, protests and public scrutiny targeting pipeline developers, environmental regulators and elected officials demonstrate the sustained backlash along routes traversing thousands of miles.

But none of it has been able to stop the explosive growth of gas infrastructure across the region.

Shutdowns and Showdowns

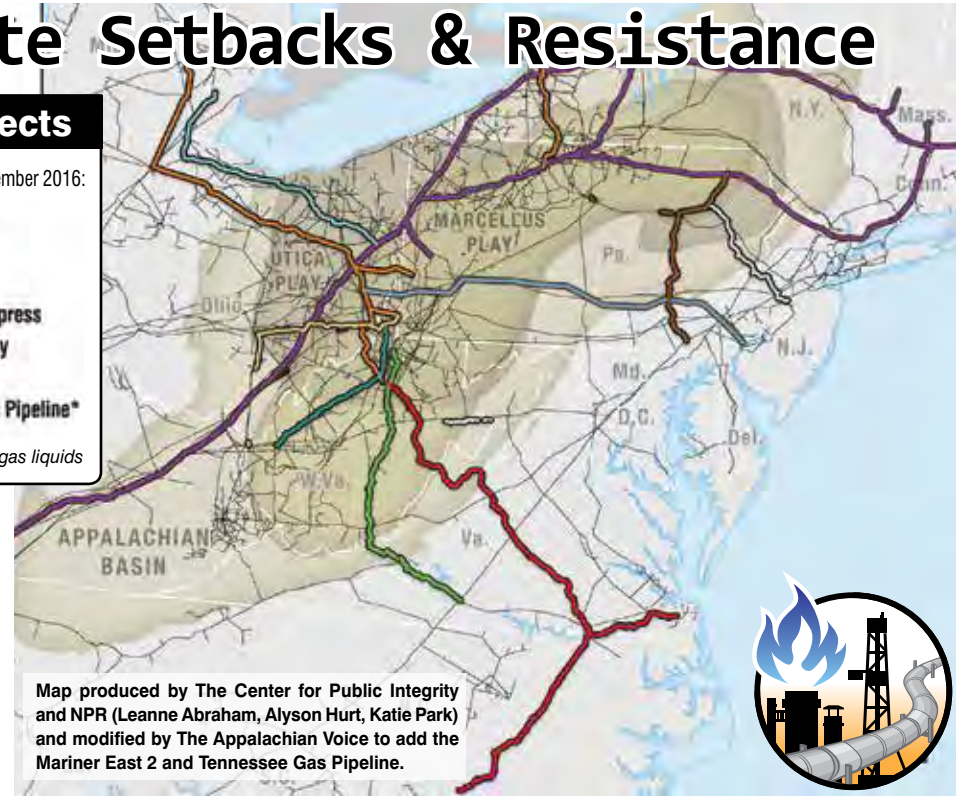
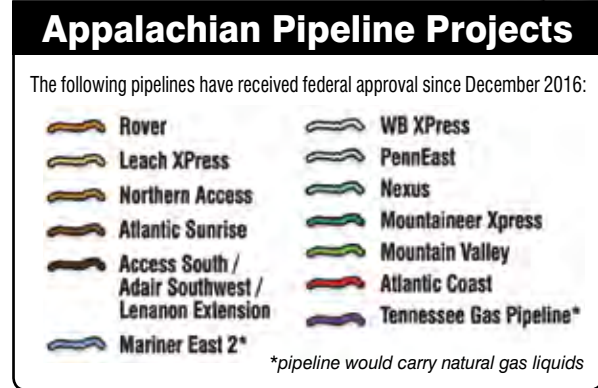
The first months of 2018 were marked by pipeline company violations that have impeded the push to construct several high-profile pipelines and fueled doubts that these projects can be built without significant environmental costs.

On Jan. 3, the Pennsylvania Department of Environmental Protection suspended construction of Sunoco's Mariner East 2 pipeline, citing "egregious and willful" violations and a lack of compliance with state laws. The order came after Sunoco failed to notify state regulators when drilling fluids used to bore tunnels spilled, even though chemical-laden mud has impacted waterways and private drinking water wells in 10 of 12 counties along the pipeline route.

The suspension was lifted a month later after Sunoco paid a \$12.6 million fine. But on March 16, Mariner East 2 incurred another violation — its 40th since May 2017 — for releasing 50 gallons of drilling fluid into a stream in Lebanon County. The 350-mile pipeline would transport natural gas liquids across southern Pennsylvania.

On March 5, West Virginia regulators halted construction of the Rover Pipeline, a 713-mile project being developed by Energy Transfer Partners that stretches from West Virginia to central Michigan. Officials cited the company for more than a dozen water pollution violations in three northern counties for, among other things, failure to control erosion and to immediately report non-compliance.

Similar to the troubles facing Sunoco, which merged with Energy Transfer



Partners in 2017, violations by the Rover Pipeline are common. It's the second time West Virginia has shut down the Rover project in the past year. Energy Transfer Partners has also exhibited a pattern of violations in Michigan and in Ohio, where it was fined \$2.3 million for spilling an estimated two million gallons of drilling fluid into wetlands in April 2017, just a month after construction began.

Considering the frequency and severity of permit violations slapped on the new spate of pipelines, opponents wonder if state agencies have the resources to effectively monitor construction activities as more projects prepare to break ground.

"We're seeing the [West Virginia] DEP enforcement staff is very busy with this one pipeline, but what happens when we layer three or four pipelines at the same time, as far as keeping an eye

on things?" Angie Rosser, executive director of West Virginia Rivers Coalition, asked in the Charleston Gazette-Mail.

As the Rover Pipeline nears completion, crews are cutting down trees in West Virginia, Virginia and North Carolina to clear paths for the Mountain Valley and Atlantic Coast pipelines. The companies behind the projects have pledged for years that the pipelines will be built safely and that landowners along the routes will be treated fairly. Yet even during the earliest phases of construction, citizens found reason to

doubt those promises.

On March 16, the Virginia Department of Environmental Quality issued a notice of violation to the Atlantic Coast Pipeline for clearing trees in 15 spots along restricted zones created to protect water quality. While the state's order did not stop construction, a spokesperson for Dominion Energy said the company paused tree cutting for three days to "reinforce environmental compliance."

"We are committed to building this project to the highest environmental standards," Dominion spokesperson Aaron Ruby said in a statement. "We accept responsibility for falling short of that commitment, and we've taken serious steps to prevent it from happening again."

The Atlantic Coast Pipeline was already pressed for time. A day before the violations were issued, Dominion requested permission from the Federal Energy Regulatory Commission to continue tree cutting beyond March 31, a deadline intended to protect critical habitat for migratory birds and bats in the three states. But on March 28, FERC denied the company's request.

Precision Pipeline, LLC, a contractor hired by Mountain Valley Pipeline, has also come under scrutiny for its role in other pipelines plagued by environmental fines and regulatory setbacks. Precision was brought on after what the project's developers described as an "ex-

Continued on next page

Pipelines Advance

Continued from previous page

tensive evaluation and review process" to the Roanoke Times.

Precision Pipeline lists the Rover and Mariner East pipelines on its website as projects it has played a role in developing.

Meanwhile, more gas infrastructure projects are being permitted in the region. After receiving approval from FERC in the final days of 2017, TransCanada has started work on the Mountaineer XPress Pipeline in West Virginia and Gulf XPress compressor stations in Kentucky, Tennessee and Mississippi. The projects are intended to expand its vast Columbia Gas Transmission network and increase transport capacity for the Appalachian Basin to Gulf states.

Widespread Resistance

The expansive build-out of gas infrastructure in the region is being met with forceful grassroots and legal opposition.

As of late March, two pipeline resisters in West Virginia had occupied treetop platforms along the path of the Mountain Valley Pipeline for nearly a month, despite multiple winter storms. Their presence on Peters Mountain has thus far blocked crews from completing their intended clear-cut along the pipeline's route. Contractors face a March 31 deadline to clear trees without running afoul of federal endangered species rules.

The tree-sitters are stationed in Jefferson National Forest near the site where Mountain Valley Pipeline plans to bore through the mountain directly beneath the Appalachian Trail.

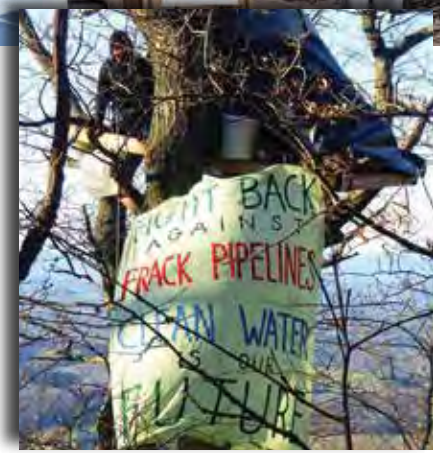
Mountain Valley Pipeline sought a preliminary injunction against the protesters. But on March 20, a West Virginia judge denied the company's request after developers failed to demonstrate that the tree-sit was within the company's right-of-way.

One tree-sitter told a reporter with West Virginia Public Broadcasting that she saw the protest as "something that will catalyze the entire community that's been working together to stop this project and other fossil fuel infrastructure projects within this region."

Indeed, the action has generated a series of support rallies in Monroe and surrounding counties, including at a gate blocking a U.S.



On March 27, advocates called for Virginia Gov. Ralph Northam to halt pipeline tree-clearing and ensure that the state reviews individual stream crossings. Photo by Cat McCue. At left, a tree-sit established in February to block Mountain Valley Pipeline tree-felling on Peters Mountain was running strong at press time in late March. Photo courtesy of Appalachians Against Pipelines



Forest Service road. After the tree-sit began, the agency issued a closure order for a 400-foot corridor of national forest along the pipeline's route.

Meanwhile, in rural Buckingham County, Va., opponents of the Atlantic Coast Pipeline have established Three Sisters Resistance Camp. The forest camp is hosted by a local landowner who is against the pipeline.

Martha, a camp member who does not want to use her real name for security reasons, says that she and others at the camp have fought the pipeline for several years through other means: lobbying in Richmond, raising awareness and connecting with area residents through hikes and bike rides, and following gubernatorial candidates on the campaign trail. Yet the project is moving forward.

"The landowners are watching the land that they've lived on, that their families have lived on for generations, that they planned to retire to — they're watching the destruction physically in that space," she says. "And so it feels like the only option we have left at this point is physically putting our bodies in the way."

Keep Watch

- ❑ For more information about Mountain Valley Watch, visit powhr.org
 - ❑ To learn more about Pipeline CSI program along the Atlantic Coast Pipeline route, visit: pipelineupdate.org/csi-volunteer
 - ❑ Recorded webinar trainings on how to monitor the routes are also available.
- Virginia:** apvoices.org/pva-program
West Virginia: tinyurl.com/wv-monitor

Community members have donated food, solar panels and other supplies to the camp, according to Martha.

"This is just the beginning," she says. "We lost some trees and that's hard to see, but trees can grow back. I think what we're really here for is to stop any pipe from going into the ground. So I think in two months we'll still have that mentality, so we'll be doing whatever it takes to preserve Virginia."

Watchful Eyes

As tree felling began in late winter, networks of concerned citizens along the routes of the Mountain Valley and Atlantic Coast pipelines announced plans to carefully monitor pipeline construction and to alert regulatory agencies and the media of any violations.

Along the route of the Atlantic Coast Pipeline, organizers of the Pipeline Compliance Initiative, known as Pipeline CSI, expect to partner with hundreds of volunteers in Virginia and West Virginia. The group intends to prepare volunteers for a variety of tasks, including stream

monitoring, document review and aerial surveillance. In the case of a spill or other suspected violation, Pipeline CSI would send teams to investigate.

"We strongly believe that the ACP is unneeded and cannot be built safely without causing permanent damage to the environment, particularly critical water resources," stated Rick Webb of the

Dominion Pipeline Monitoring Coalition in a January press release. "We will continue to challenge the government decisions involving the project. But, with certain pre-construction activities already underway, citizen oversight is essential given the limited resources of government agencies that are responsible for regulating pipeline construction."

At a March vigil in the historic village of Newport, Va., residents who have been fighting the Mountain Valley Pipeline announced the formation of a monitoring program called Mountain Valley Watch.

According to Rick Shingles, coordinator of Preserve Giles County and a program leader, there are a number of reasons why citizen monitoring is necessary, including pipeline builder EQT's troubling track record and the company's lack of experience with 42-inch-diameter pipelines or constructing such projects on terrain that is both steep and fragile.

"All that should compel someone to monitor the pipelines," he says. "Our county governments are not doing it, the only recourse we have is the Department of Environmental Quality, which we don't feel we can rely on."

Local organizers are partnering with the Sierra Club and New River Geographics, a Blacksburg-based geographic information systems company, to develop a smartphone app that volunteers can use to send photos and precise locations of suspected violations to what Shingles calls a "central information hub." From there, once the report is vetted, it would be sent to state environmental regulators and posted online.

According to Shingles, many local citizens are exhausted from the years-long fight against the pipeline. Yet, he says, the idea of Mountain Valley Watch is catching on. "We're getting a very enthusiastic reaction from people who wish to volunteer," he says.

"Beside the fact that [monitoring] is truly constructive, there has to be a record of this, of what they did," Shingles adds. ♦

Landowners and conservation groups including Appalachian Voices, the publisher of this newspaper, are continuing to challenge the approval of various pipeline permits in court. Read about these court cases in the online version of this story and brush up on pipeline basics with our Pipeline Primer at apvoices.org/thevoice.



People in the path of Pipelines

New pipelines transporting natural gas and gas liquids would cut across hundreds of miles through Appalachia and beyond, putting people, land and water at risk. On the following pages, residents along the route share their stories.

Barbara Exum Wilson County, N.C.

Barbara Exum's late father had a vision for his 80 acres of land along Exum Road in rural Wilson County, N.C. He hoped to sell some of it to fellow African-Americans for starter homes and to draw his five children to move back here as adults. He succeeded in providing home-sites for half a dozen families, including two of his now-retired daughters, Barbara Exum and Mavis Edmunson.

But with the prospect of the Atlantic Coast Pipeline going in across the street and crossing a quarter-acre of Exum forest land, the sisters doubt that any of the other siblings will want to move back.

"We are all seniors here, caring for ailing parents or spouses," Barbara says. "It's very discouraging and stressful to bring this kind of thing into our lives."

Barbara is particularly concerned about the health effects of the pipeline and related gas production, both near and far. Close by, she worries about the accidental release of toxic gas and the possibility of an explosion. "I liken it to the tobacco industry telling us smoking was not hazardous to our health," she says.

She is also mindful of environmental effects of the fracking that would likely take place in the mountains of West Virginia to keep the pipeline supplied with gas in the coming decades.

"There is a presumption that African-Americans do not care about the environment," Barbara says. "We are concerned for all the reasons everyone else is."

Barbara Exum (above and at left) and her sister Mavis Edmunson look at photos of another pipeline. Photos by John Manuel

Barbara says the focus of the battle has now changed to the \$58 million that North Carolina Governor Roy Cooper received from the ACP to offset any environmental impacts of the pipeline. She is not convinced this will benefit her community. "Who's going to get this money and how are they going to spend it?" she asks.

Barbara has been involved in every aspect of the fight against the Atlantic Coast Pipeline, including the formation of an anti-pipeline group, Wilson County No Pipeline. She is trying to raise awareness of the potential effects of the pipeline among people who live close to, but not directly in the path of, the ACP.

"The sad part is Duke Power and the land management company didn't even notify people whose land is not immediately affected," she says.

The steady approval of permits for construction have left Barbara discouraged, but not defeated. "I'd like to think it's not a done deal," she says. "We have not settled with the land management company yet [for purchase of an easement]. They have threatened the use of eminent domain." — *By John Manuel*



Bill and Lynn Limpert Bath County, Va.

Of all the places on the map that Bill and Lynn Limpert could have chosen to build their retirement retreat, they chose a barely level spot on 120 acres of steep land in the rugged mountains of Bath County, Va.

The views are beautiful, but it was the trees that drew the couple to the land in 2009 — a vast old-growth oak and hickory forest, including rare virgin stands. It's so special, the state Department of Conservation and Recreation has designated the area Little Valley Slope Conservation Area.

The proposed Atlantic Coast Pipeline would bisect the area, gouging a wide swath more than 3,000 feet across the Limpert's property. Among the first

trees to go would be the 15-foot-circumference sugar maple, about 300 to 400 years old. From his deck, Bill points to the route as it would run from a distant ridge, drop into Little Valley, then climb a ridge to within 600 feet of their home and on up the mountain behind them where the slopes average between 39 and 66 percent.

There is no way the pipeline can be built without inflicting serious damage on water resources, says Bill. He should know — he was an environmental regulator for almost 30 years at the Maryland Department of Environment. "I can say without equivocation, these are the worst erosion and sediment control plans I've ever seen for any large con-



The Limperts stand beside an iconic sugar maple on their land, above. Estimated to be more than 300 years old, the tree is in the direct path of the Atlantic Coast Pipeline. At left, a sign along U.S. Route 220 marks the pipeline's blast radius. Photos by Cat McCue

struction project."

The Limperts first heard about the Atlantic Coast Pipeline in 2014. They weren't directly impacted, but attended meetings and wrote letters in opposition. Then they got the letter from FERC saying it would cross their land due to a re-route. "February 12, 2016," they recall in unison. "It was such a shock, such a nightmare to see that letter. And it's been a nightmare ever since," says Lynn.

Bill works every day fighting the pipeline. Over the past two years, about 150 students, researchers and activists have come to hear their story. They have scrambled up steep slopes



to document landslides, a not infrequent occurrence in these parts. They have traveled to Richmond to make their case, most recently in March to meet with the Virginia Secretary of Natural Resources.

"We're still hoping for a miracle," says Bill, and their land due to a re-route. "February 12, 2016," they recall in unison. "It was such a shock, such a nightmare to see that letter. And it's been a nightmare ever since," says Lynn.

Lynn chimes in with a laugh: "Why not?" But if it goes through, they will leave and put the house on the market, knowing they'll get a fraction of their investment — if it sells. They recognize they are among the lucky, though; they still have their home in Maryland.

"Most other folks can't move away from it," says Bill. — *By Cat McCue*



Carolyn wears a pouch of earth from the Standing Rock water protectors' camp around her neck to remind herself of the strength of the land. Photos by Kevin Ridder

Carolyn Reilly Franklin County, Va.

It's unusual for Carolyn Reilly to be at her 58-acre family farm all winter. With early March being a quiet time of year, she would have liked to leave the farm in the hands of her parents for a few days to take a trip with her husband and kids. But with the constant threat of Mountain Valley Pipeline land surveyors showing up unannounced and unwanted on their property, Carolyn fears to leave for even a short time.

"We're pretty much held hostage of our own accord because we want to be watchdogging, watching our land," she says.

"They don't come down the drive," Carolyn says. "They come through the woods, crossing the creek. ... They just show up and start doing it."

Carolyn, her husband Ian and her parents Betty and Dave co-own Four Corners Farm in Rocky Mount, Va. After living in Florida for most of their lives, Carolyn and Ian became tired of their unfulfilling jobs. So in 2010, they sold many of their possessions and lived in a camper with their four children for six months before settling on their new home and starting their community-focused organic farm with Carolyn's parents.

The land holds a special place in the family's hearts — three of the Reilly children were baptized in the creek behind their home.

"We used to teach classes here," Carolyn says. "We had skill-sharing things and monthly dinners building community and relationships around local food."

In the fall of 2014, they received a phone call from land agents representing Mountain Valley Pipeline, LLC, informing the Reillys of their plan to bury a 42-inch

fracked-gas pipeline in the family's creek and cut a quarter-mile swath through prime pasture 800 feet from the house.

When the company offered \$50,000 for the pipeline's right-of-way, the family refused.

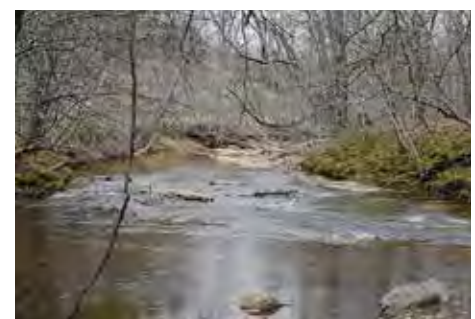
"How does that offset the loss of property value for trying to sell?" Carolyn asks. "We still have a mortgage. It felt insulting."

Instead, Carolyn became heavily involved with Bold Alliance, a nationwide nonprofit organization that advocates against fossil fuel projects.

"I've been working and trying to organize folks to get information and feel empowered by that knowledge," she says. "That's become a big focus for our family, and for me in the last three years, and it's taken me away from our first reason of why we moved here."

On March 2, a federal judge ruled that Mountain Valley Pipeline can seize 300 people's land, including the Reillys, through eminent domain.

"They're spending all this money now just tearing things up near communities and homes," Carolyn says. "And there is no say in any of it for the people who will have to deal with it and live next to it." — *By Kevin Ridder*



Workers plan to bury a pipeline under this creek behind the Reillys' home.



Ashby Berkley

Summers & Monroe Counties, W.Va.

When Ashby Berkley talks about why he's fighting the Mountain Valley Pipeline, the fact that pipeline developers are using eminent domain to cut through the land he's owned for 50 years is almost an afterthought — not to say he isn't upset about it.



property," he says. "I will not run a commercial campground on top of that pipeline. I don't think anybody would want to stay over a place that could blow."

What concerns him most is potential damage

to the region's underground network of sinkholes and caves, or karst terrain. Ashby recently purchased and plans to renovate Old Sweet Springs, a resort founded in 1792 in present-day Monroe County, W.Va. The resort was named and widely known for its warm, naturally carbonated artesian springs — George Washington even visited. And while the resort is around 40 miles from the pipeline's route, the source of the natural springs is unknown.

"It's a gorgeous place on the river," he says. "But I'm not fighting it because it's me. I'm fighting it because it's 300 miles of hell and destruction."

While his actual home is a half-mile away, he owns two rental houses on the Summers County, W.Va., property by the Greenbrier River and had plans to install a boat dock and upscale camping ground — but not anymore.

If the worst happens and the pipeline explodes, the property — which he values at \$535,000 — would be annihilated. Before the company used eminent domain to seize the right-of-way, they offered Ashby \$34,000, which he promptly refused.

"It just completely destroys my

Ashby worries that the pipeline or any fracking it might attract to the area could potentially pollute or even deplete the springs' aquifer, not to



Ashby Berkley stands inside Sweet Springs Resort in Monroe County, W.Va. His plans to renovate the building, left, are muddied by fears of pipeline construction depleting its renowned natural springs. Photos by Kevin Ridder



mention the rest of the county's water. "If they break through that top rock and the bedrock, the water could just go right on down into the earth and be

gone," he says. "We'd have no way of getting it back. It's a serious thing. ... This is the Earth we live on. Where are we going to live when they screw it up? And if one generation doesn't fight for the next generation, we've certainly lost our total reasoning and cause." — By Kevin Ridder

Barbara Jividen

Putnam County, W.Va.

Barbara Jividen recently finished painting a sunset scene of the view from her home: the Kanawha River flows by flat river bottom land, frequented by birds and fox, that stretches from the steep river bank to her patio.

"We bought this land wanting a little paradise on the river, and a lot of people say that's what it looks like, a little piece of paradise," Jividen says. "And that piece of paradise is going to be disrupted when that pipeline goes through."



Pipeline developers plan to install the pipe beneath the Kanawha River next to Jividen's home, a process that is expected to take several months. If completed, the pipeline will also run through her neighbor's land, 500 feet from the shop where her husband Edward, a Vietnam veteran, works on his old cars and motorcycle. Their house is immediately beside the shop.

"Why do you put a dangerous pipeline this close to a personal residence?" Jividen asks. "We

live in a small development; if it should blow, it's going to take us all out. We're in the incineration zone. We're in it. Why?"

"It's legal," she continues. "But it didn't have to be this close to us, there's plenty of vacant land on the other side that it could have gone without it being

this close to a residence."

Near Jividen's home, the pipeline will also run near a Methodist church, through the pumpkin patch owned by hydroponic tomato producer Grits Greenhouse and close to other small homes. On the other side of the river, the pipeline will pass beside an industrial park before continuing through another parcel of land owned by her next-door neighbor.

During the public comment period held by the Federal Energy Regulatory Commission, Jividen went door-to-door, informing residents of the pipeline plans and her concerns regarding safety risks and declining property values. She handed others in her community the materials for them to submit public comments to FERC, but whether they did, Jividen isn't sure. "I can only do what I can do," she



Mountaineer XPress Pipeline survey stakes mark the site where the pipeline would cross beneath the Kanawha River. Photo by Barbara Jividen

says. "I will be watching them every step they take, every move they make. And I will be doing what I legally can do to minimize my discomfort and my life being upset by it."

"If we all had [a pipeline] in our backyard we would all be activists." — By Molly Moore



Robie Goins

Robeson County, N.C.

Robie Goins does not own land directly in the path of the Atlantic Coast Pipeline, but as a resident of Robeson County, N.C., he is deeply concerned with how it will affect his fellow citizens.

Robeson County is the designated southern terminus of the ACP and already hosts a compressor station, an industrial facility that re-pressurizes gas for a Piedmont Natural Gas pipeline. In 2017, a valve at that station failed and leaked gas into the air.

"They called it an 'occurrence,' we called it an 'accident,'" Robie says. "The construction of the ACP increases the potential for more of these kinds of leaks."

Just outside the town of Pembroke, Duke Energy plans to build a metering station and a 350-foot-tall microwave tower to relay signals between one



Robie Goins stands before a Piedmont Natural Gas compressor station in Robeson County, N.C., an area that is central to the Lumbee Tribe's homelands. Photo by John Manuel

compressor station and another. Concerned about the health effects of these facilities, Robie has filed a petition with the county board of commissioners seeking to have a conditional use permit for the metering station and tower revoked, and is waiting to see whether or not he will be allowed a public hear-

ing to provide further evidence against these facilities.

Robie is a member of the Lumbee Tribe and has a particular interest in how the pipeline will impact tribal members and their ancestral lands, as well as other citizens of Robeson County.

"I am concerned about the historical and cultural impacts the proposed Atlantic Coast Pipeline project

will have on my community," Robie says. "Water bodies are often sites of Native American archaeological findings. Construction of the pipeline, and additions to the existing Piedmont Natural Gas pipeline, could affect many tributaries and swamps in the area.

They could destroy valuable cultural and historic artifacts and ancestral sites that are important to the Lumbee Tribe. I am concerned that adequate historical and cultural impact study has not been completed by regulators."

Robie is one of the principal spokespersons in "Robeson Rises," a documentary film that warns of potential environmental risks from the pipeline. Produced with the involvement of Appalachian Voices, the publisher of this newspaper, the film is posted for public viewing at robesonrises.com.

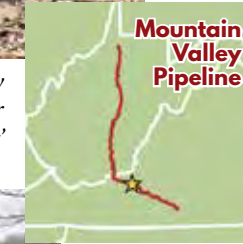
He also co-organizes EcoRobeson, a local citizens' group which, in addition to challenging the pipeline, is raising awareness about a Duke Energy coal ash basin in Lumberton, N.C., the chemical GenX recently found in some local wells, and large-scale livestock facilities whose waste disposal methods can contribute to water pollution. — By John Manuel

Cletus and Beverly Bohon

Montgomery County, Va.



Cletus plays with his dog Zena, surrounded by trees that were clearcut about two weeks after this picture were taken. Below, the Bohons' house in Elliston, Va. Photos by Kevin Ridder



Standing atop a ridge in his 50-plus-acre expanse of woods near Elliston, Va., Cletus Bohon, still wearing his foundry uniform, glances momentarily at the pipeline surveyor's stake hastily scrawled with "MVP." In 1990, Cletus bought a house on 10 acres of land. He and his wife Beverly added 32 acres in 2003 to prevent other construction, and another eight in 2015 so they could have the end of the private road.

"Well that worked real well," Cletus says, looking away as the stake's orange streamer flutters in the breeze. Cletus grew up hunting with his father in the mountains surrounding Roanoke Valley, where he gained a love of the countryside. He dreamed of one day living and hunting in his own woods.

"Up until a few years ago, I was

living a dream," he says.

In January 2015, one month before the last payment on the Bohons' home and most of their land, a letter arrived from Mountain Valley Pipeline, LLC, to inform them that the proposed path of the 42-inch fracked-gas pipeline would slice across their land. They were eventually offered \$32,000 for the pipeline's 1.6-acre right-of-way, which the company calculated in part by classifying their two-story house as a one-story cabin.

"I mean, we have a little red house set out in the woods," Beverly says. "But it's not a cabin."

The company also stated they would need to widen the community's single-lane gravel road to 40 feet during construction, which would cut into the Bohons' front yard and likely bury a nearby creek.

"They offered \$180 for what they're going to do in front of my house, for the damage to that road," Cletus says. "That won't even buy a load of gravel."

After they turned down an initial easement offer, Beverly said a pipe-

line representative told their neighbors that the Bohons had signed it after all.

"Fortunately, old country people don't just believe everything they hear, you know," Beverly says. They got on the phone and they started calling, and then [our other neighbor] called up and said, do you know what they did? ... They don't play fair, and they don't play by the rules."

In mid-March, a Mountain Valley Pipeline crew used eminent domain to cut down all the trees within the right-of-way on the Bohons' property. While Cletus says he has quite a view now, he didn't want it. "I liked it the way it was," he says.

The family had expected to live out their lives on the homestead and leave it to their grandchildren.

"Hopefully I was going to have something for them," Cletus says with a sigh. "But I don't know if they or anybody is going to want it once a pipeline's coming through it. My wife and I have talked about moving, but we don't know where in the hell we'd go. I mean this is home, you know." — By Kevin Ridder



Ella Rose Buckingham County, Va.

In her many hours of looking out the window of her home in rural Buckingham County, Va., Ella Rose has yet to spot the black bear. Her neighbors have seen it, so she knows it's there. She spies wild turkey, deer, an occasional fox and all manner of birds. Watching the wildlife is a great joy for her, but it may soon come to an end.

Dominion Energy, the lead developer of the Atlantic Coast Pipeline, plans to build a massive natural gas compressor station in her community of Union Hill. Her home will probably be the closest – perhaps 500 feet. The industrial facility would run 24/7, creating a constant din. Then there's the air pollution and water pollution to worry about – and maybe explosions.

"If that compressor ever blows, it's going to take us all to Kingdom Come," she says.

Ella, 74, grew up in adjacent Nelson County, and went to Washington, D.C., to attend one of the first black business colleges in the country, hoping to become a secretary. She ended up

working at a D.C. restaurant for 26 years, and another 21 years in food service at the Bolling Air Force Base.

She had always planned on returning to the Virginia countryside to retire in peace and quiet. In 2012, she moved into the modest home on 1.9 acres she had purchased years before. Just two years later, Ella learned about the giant fracked-gas pipeline and compressor station headed her way. And then came plans for a major telecommunications tower near her home as part of the project.

"I want to do other things without worrying about how they're going to contaminate my water and how am I going to be able to breathe when I get older."

She suspects Dominion chose her small, predominantly African-American community purposefully. "I guess they were anticipating nobody speaking up," she says.

They were wrong. Ella — and other



Photo by Cat McCue

community members — has become a staunch advocate for stopping the project. She attends monthly meetings of Friends of Buckingham, a local group formed to oppose the gas infrastructure and preserve the natural and cultural resources of the county, and has attended countless government meetings.

"It seems clear the voices of Union Hill have been ignored throughout this entire process. Our lives count too, and

they should not be sacrificed in favor of financial interest," she says.

In March, the company told Ella they were going to start cutting trees near her, and she soon heard the buzz of chainsaws in the woods.

"They're running all the animals out of there," she says. "I don't like the idea they can infringe on you. I wasn't expecting this. This is not the plan I had for my retirement." — *By Cat McCue*

Elise and Ellen Gerhart

Huntingdon County, Pa.

Elise Gerhart has always felt connected to her family's 27 acres of forest in Huntingdon, Pa.

"My mom kind of raised me with the idea that this land is for conservation, and that it was our role to be stewards for this piece of woodlands," Elise says. So when Energy Transfer Partners offered the Gerharts \$14,000 to cut a three-acre swath for the Mariner East 2 pipeline in 2015, they immediately refused.

When the county court granted the Dallas-based company eminent domain to seize the land in January 2016, the Gerharts still refused to cede — especially because Energy Transfer Partners is also behind the Dakota Access Pipeline. In 2017, Energy Transfer Partners merged with Sunoco, which had more crude oil spills from 2010 to 2016 than any other

operator nationwide.

When the Gerharts learned that the company would be coming in March 2016 to cut down any trees in the pipeline's path before obtaining construction permits, the family organized several tree-sits and a non-violent protest on the ground. But the land surveyors didn't come alone.

"They brought about 20 police with them when they showed up with the tree-clearing crew back in March 2016," Elise says. "They arrested my mom and two other friends."

"They put other people on really excessive bails, like \$100,000 and \$200,000 bails, just for being in the vicinity of the pipeline easement and the tree clearing," Elise continues.

The company proceeded to cut down all the trees in the easement that did not have



Ellen and Elise Gerhart. Photo by Jen Deerinwater

people in them. "In two days, they cut down an 80-year-old forest," Elise says.

The Gerharts and others underwent eight months of criminal court proceedings before the county's district attorney dropped the charges. When Energy Transfer Partners obtained construction permits in early 2017, the family formed Camp White Pine and invited others to join them in staging an ongoing tree-sit.

The company has a deadline of March 31, 2018, to finish clearcutting due to federal wildlife protections — at press time on March 29, Elise did not know whether she would soon be in jail.

"There's been a lot of heartache and pain and struggle, but there's also been a lot of hope and love and support and determination with people taking the power into their own hands," Elise says. "When

[state and county] officials won't do anything to protect us from these horrible companies, people have stepped up to do it themselves, and that's really inspiring."

As of March 26, there were 47 reported violations during the pipeline's construction including a punctured aquifer that resulted in tainted drinking water for some residents.

— *By Kevin Ridder*



Marvin Winstead Nash County, N.C.

Contractors for the Atlantic Coast Pipeline have already cut the trees across the street from Marvin Winstead's Nash County, N.C., farm, and they have threatened to do the same with his.



Coast Pipeline.

For generations, Marvin and his ancestors have raised soybeans, corn, cotton and tobacco on their 79 acres of table-flat land. The Atlantic Coast Pipeline is target-

ed to run diagonally down the length of those fields. Pipeline contractors have assured him that his production will be unaffected once the pipe is laid and buried, but Marvin is unconvinced.

"I've seen pictures of land in Johnston County that had a pipeline laid through it 20 years ago," Marvin says. "The corn growing over the pipeline was stunted compared to what was on either side of it. That's because they lay gravel on top of the pipeline to handle heavy equipment."

He is also unconvinced about the promise for local jobs. "The land is being surveyed and the trees felled by out-of-state contractors," he says.

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Marvin Winstead stands before trees on his neighbor's land that were felled for the Atlantic Coast Pipeline. He has gone to court to try and stop pipeline construction on his farm. Photo by John Manuel

and a Dominion executive was recorded saying the company expects to extend the pipeline into the Palmetto State.

Marvin is also concerned about the larger impact of increased natural gas production and consumption.

"Companies are singing the song of clean-burning natural gas," he says. "It may be cleaner burning than coal, but when you factor in releases at the well site, leaks along the pipeline and emissions at the generating plant, you have raw methane escaping into the atmosphere. That is a more

potent greenhouse gas than [carbon dioxide]. Renewables, primarily solar, can meet our needs here and now."

Whether or for how long Marvin can hold off the ACP is unknown. But for now, he and Ronnie Locke are making history. — *By John Manuel*

M. Beram Doddridge County, W.Va.

M. Beram describes her home as set back in a skinny West Virginia hollow, surrounded by woods. Some days, the only traffic comes from the mailman and a few neighbors further up the dirt road commuting to and from work. It's quiet, and that's what she prefers.

But over the past several years, two gas compressor stations within a mile-and-a-half radius have interrupted that tranquility, and preparation for the Mountaineer XPress Pipeline has begun just several hundred feet from her home and driveway.

After watching the gas industry's footprint expand in Doddridge County, Beram wasn't surprised to learn that a major fracked-gas pipeline was headed her way. The Mountaineer XPress Pipeline's right-of-way runs through two of her neighbors' land along her property line, so Beram receives no compensation.

"I knew what to expect," she says. "But I also know what my rights are and I'm not afraid to speak up and ask questions and report everything that I see that's wrong. But it's just another time hog."

"I can choose to ignore it, but the other aspect is my property value is shot," Beram continues. "I want to get out of here, but who in their right mind would purchase a piece of property in the blast zone?"

This fall, crews began widening her narrow road and straightening out curves, a process that involved removing 100 dump trucks full of dirt from the hillside each day for nearly a month. Beram expects that the increased traffic on her dirt road — and the resulting dust — will be a major



A pipeline right-of-way several hundred feet from M. Beram's home. Photo by M. Beram

nuisance.

She also worries about an accident. The Mountaineer XPress is slated to run through a nearby field that has an older, conventional gas well and related smaller pipelines, plus Beram's buried phone and electric lines. And she's

concerned that the process of burying pipe could disturb her reliable drinking water well. Though she asked the company to test her drinking water well, and they complied, she notes that they did not test the recharge rate.

"What really is the kicker is we're suffering through this whole B.S. process, and the gas is slated for export," she adds.

The incoming pipeline is only part of the reason she wants to move. Air quality in Doddridge County has worsened as fracking wells, compressor stations and other facilities have multiplied, Beram says, and now she has periodic breathing problems that improve when she leaves the area.

"You shouldn't have to spend all of your time fighting to try to save something that it should be your natural right to have," she says. "We should be entitled to clean air and clean water without having to fight for it." — *By Molly Moore*

Holding Pipeline Profiteers Accountable

By Appalachian Voices Executive Director Tom Cormons and staff



How much money would you consider to be “just compensation” to exchange your right to peaceful enjoyment of your homeplace for living with a massive pipeline carrying natural gas under super-high pressure through your land, creating a scarred, unusable and potentially dangerous area? What is a fair price for worrying that the pipeline construction would ruin your community’s water supply? What if you had no choice in the matter, but were forced to take the cash from the pipeline company and watch your property value sink?

Such is the predicament of countless landowners across our region, including residents along the routes of the massive proposed Atlantic Coast and Mountain Valley pipelines. For this special issue, we spoke with several of them. Each has a different story to tell, but all are casualties of the unjust — and well-paid-for — influence that corporations wield over our government, as well as the latter’s complicity.

Across the United States, the fossil fuel industry is increasingly taking private land to build pipelines that most definitely do not advance the public good.

The Mountain Valley and Atlantic Coast fracked-gas pipelines are no exception. On the contrary, ample evidence shows they would almost certainly pollute hundreds of waterways

across three states, pose grave health and safety threats to communities, add millions of tons of greenhouse gas to the atmosphere every year, harm local economies, and

increase energy costs for customers.

For almost four years, thousands of citizens have fought these proposed projects. They submitted comments to government agencies, traveled long distances to speak at hearings, engaged the media and contacted their elected officials. As you’ll read here, their lives have been hijacked by this fight, but they are compelled to defend their homes, families and communities.

So why are miles of forest along the routes already clearcut and giant bulldozers poised to begin gouging the earth? The almighty dollar, of course. Dominion Energy, lead developer of the Atlantic Coast Pipeline, and EQT Midstream Partners, LP, lead developer of the Mountain Valley Pipeline, have easily leveraged a rigged system that disadvantages ordinary citizens and allows companies to rake in huge profits.

The Federal Energy Regulatory Commission oversees interstate natural gas pipelines, and in October 2017, it



Dave and Betty Werner, who co-own and live on Four Corners Farm, have resisted Mountain Valley Pipeline’s attempts to seize a portion of their family farm since 2014. Read their daughter Carolyn’s story on page 17. Photo by Kevin Ridder

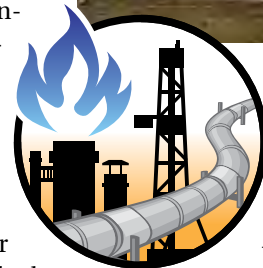
approved both pipelines at 7 p.m. on a Friday. Instead of subjecting the projects to rigorous analysis to see if the natural gas is actually needed — a crucial test for determining public good — it accepted the “self-dealing” contracts that Dominion and EQT had made with their own affiliates as proof. This is common practice for the agency, which has rejected only two projects out of 400 since 1999.

In a surprise move, though, Commissioner Cheryl LaFleur issued a forceful dissent, explicating that the projects are not in the public interest and highlighting how FERC’s process puts ratepayers, the environment and the climate at risk. Similarly, a few months earlier, outgoing Commissioner Norman Bay called for major changes to FERC’s review of pipeline proposals, including determining whether more capacity is actually needed, assessing life-cycle greenhouse gas emissions, and improving transparency and public participation.

When FERC approves pipelines, it conveys extraordinary power and profit to the companies involved; they can seize people’s property through eminent domain and bank on a virtually risk-free profit of 14 percent. There’s no reason a gas company or utility wouldn’t want to build a pipeline, landowners and the environment be damned.

But the resistance is growing. In addition to the thousands who have voiced opposition to the Mountain Valley and Atlantic Coast pipelines, elected officials are putting distance between themselves and powerful utility interests. In Virginia, more politicians are rejecting campaign contributions from Dominion, and at least nine bills were introduced in the General Assembly aiming to restrict pipeline projects in various ways. Hundreds of landowners on both routes refuse to take easement purchase offers, forcing the companies into court. As we go to press, two bold souls in West Virginia are staging a treescut along the Mountain Valley Pipeline route to stop clearcutting in that area; further protests are likely to arise.

Appalachian Voices, standing shoulder-to-shoulder with landowners and partner organizations in the region and nationally, remains committed to fighting the Mountain Valley and Atlantic Coast pipelines. Yet, as devastating as these projects are, they are precursors for what could be coming to Appalachia (see next page). The fossil fuel industry and monopoly utilities, and their political abettors, will not turn easily from their money-making course. We citizens must continue to call them out, hold them accountable, and push hard for a future that is economically and socially just, and environmentally sustainable. It’s just over the horizon. ♦



Sparking Petrochemical Valley?

Plans for cracker plants and a gas liquids storage hub could lead to a toxic plastics industry in Appalachia

By Kevin Ridder

Hours before sunrise on May 5, 1988, gas leaking out of a vapor line in Royal Dutch Shell’s Norco, La., petrochemical refinery suddenly sparked. The resulting explosion killed seven Shell employees, caused millions of dollars in property damage and spewed 159 million pounds of toxic pollutants in the air, resulting in the evacuation of 4,500 people.

The explosion occurred in the refinery’s ethane cracker, which uses intense heat to “crack” ethane — a natural gas liquid that can be isolated from shale gas — into ethylene, a raw material for plastics manufacturing.

“My sister’s house was destroyed, and my mom’s house, too,” says Iris Brown, a former Norco resident. Norco sits along an 85-mile heavily industrialized stretch of the Mississippi River known to locals as “Cancer Alley.” Brown’s mother and sister died of what she says were pollution-related illnesses from years of exposure. Brown herself was diagnosed with asthma at 52.

More than 10 years ago, when Shell began offering housing buyouts to community members living near the facility, Brown sold her home and moved to New Orleans. After Brown moved away from Norco, a persistent rash on her hand quickly disappeared. She has since become a traveling advocate against Shell, and in 2016 spoke in Beaver County, Pa.,

where Shell has started constructing a new \$6 billion ethane cracker.

Although America’s petrochemical industry has historically been located along the Gulf Coast, massive natural gas liquid reserves available in the Marcellus and Utica Shale have caused many business and political leaders to look to Appalachia for the industry’s future. Shale gas production, largely driven by fracking — the process of forcing a cocktail of chemicals into the ground at high pressure to create fractures so oil and gas can be extracted — more than tripled in Appalachia from 2012 to 2017. As gas is recovered, so are other liquid hydrocarbons like the ethane used in cracker plants.

A May 2017 report by the American Chemistry Council, a trade association for the nation’s chemical companies, stated that Appalachia has the potential to become a petrochemicals and plastics manufacturing hub. The council’s report hypothesizes that at least five cracker plants will be built and suggests that “as many as nine crackers could be supported in the region.” The plants would be fed by approximately 500 miles of new or converted pipelines.

Plans for such an expansion would be centered around the Appalachian Storage and Trading Hub, an estimated



\$10 billion project headed by Appalachia Development Group, LLC. The hub would likely store these toxic liquids in natural underground caverns or gas wells that have already been depleted.

Plans for five cracker plants, including the one in Beaver County, Penn., have already been announced in Pennsylvania, West Virginia and Ohio — although only two are showing any signs of progress. The Beaver facility is under construction and the second plant is slated for construction right next to the Ohio River in Belmont County, Ohio. Last September, a Shell subsidiary applied for state and federal permits for the 97-mile Falcon Ethane Pipeline, which Shell estimates would be operational in 2020. Falcon would cross three states to feed 107,000 barrels of ethane a day to the Beaver County cracker plant.

People like Beaver County filmmaker and activist Mark Dixon worry about the pollution that would come with bringing another major extraction-based industry to the region.

“Nobody wants to see their community turned into a cancer alley or valley if there are better options, but Shell is leveraging the economic disadvantage in our region to push its polluting agenda onto people who are hard-pressed for better options,” Dixon says. “It’s not the market demanding that we get energy from fracked gas. It’s that the fracked gas is there and people



A 2017 American Chemistry Council report assumes that hundreds of miles of new pipelines will be built along the Ohio and Kanawha River Valleys to feed what could be an Appalachian petrochemical hub, above. The red pin marks the Shell Oil ethane cracker under construction in Beaver County, Pa., which the proposed Falcon Pipeline would serve. The yellow pin marks a second cracker that is likely to happen, and gray indicates planned facilities that have shown no recent progress. Map by Cara Adeimy. At left, an aerial photo of the Beaver cracker plant site. Photo by Ted Auch, FracTracker, July 5, 2016, with aerial assistance by LightHawk.

have figured out a cheap way to make money from it, and they have captured our politicians regionally, and they have tilted the playing field to make it more economically viable.”

Adding to the Problem

According to University of Pittsburgh toxicologist James Fabisiak, southwestern Pennsylvania is “not particularly high on the list of good air quality to begin with.”

“We’re coming from a baseline that is marginal and among some of the worst in the country,” he says. “[Especially] particulate matter pollution and ozone pollution.”

In an email, Shell spokesperson Joe Minnitte stated the facility is designed “with the Best Available Control Technology and the Lowest Available Emission Rates to minimize emissions,” which are required under the federal Clean Air Act. “We also purchased emission reduction credits locally in excess of what our facility will produce, therefore increasing air quality over time.”

Since the area’s air quality is so poor, the state requires new facilities

Continued on next page

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Petrochemical Valley?

Continued from previous page

to purchase extra emission reduction credits to make sure air pollutants don't rise above a certain limit.

In an op-ed for the Pittsburgh Post-Gazette, Fabisiak described how emissions of volatile organic compounds and nitrogen dioxide from the Beaver County cracker plant would be the equivalent of adding roughly 36,000 cars to the road.

"Shell's own estimate for release of volatile organic compounds by the proposed plant is 484 tons per year," Fabisiak wrote in the Post-Gazette. "The EPA estimates an average automobile driving 12,000 miles annually emits about 27 pounds. Therefore, the proposed cracker would emit about as much as 35,800 cars. Emissions of nitrogen oxides from the plant also would be about the same as 36,000 cars (the plant would release about 327 tons per year)."

Additionally, Fabisiak states that carbon dioxide emissions from the plant will be equivalent to the entirety of carbon dioxide emissions from the City of Pittsburgh.

Adding to the scale of pollution is the area's propensity for air inversions, which happen when cold air traps a pocket of warm, stagnant air — and all the pollution it contains — at ground level. A poignant example of this is the Donora, Pa., smog incident of 1948, in which pollution from local industry was trapped in the Monongahela River valley for five days, killing 20 and causing 7,000 to become ill.

"It's the same geography that this sort of petrochemical hub is being built around, which is along the Ohio River as it goes through Pennsylvania, West Virginia and Ohio," Fabisiak says. "And

A Different Vision for Beaver County, Pennsylvania

Once Shell announced its intentions in 2011 to build a cracker plant near the natural gas liquid reserves of the Marcellus Shale, several states began vying for the international company's attention. Pennsylvania eventually won after giving Shell a 15-year tax amnesty window and a \$2.10 per-gallon credit for ethane purchased from state-based drillers. The deal is valued at \$1.65 billion over 25 years — the largest tax break in the state's history, according to National Public Radio's StateImpact Pennsylvania. Shell projects the Beaver County, Pa., cracker plant will create 600 full-time positions.

"Six hundred permanent jobs is peanuts

for a \$1.6 billion investment," says Beaver County resident Joanne Martin. While she acknowledges that there could be job potential in ancillary industries Martin states that constructing another major fossil fuel industry would repeat the past.

"We don't believe that it's a long-term, viable business for the region," she says. "We think it's going to create more harm to the environment, and to the health of the people in the communities, than it is worth in terms of developing."

Last year, Martin helped start Re-Imagine Beaver County, a grassroots initiative to bring a fossil-free community and economic

development agenda to the region. The group is currently working on an alternative business plan to submit to local leaders.

"We want renewable energy businesses, we want green energy growth, we want them to invest as much money in the development of these alternative energy and green technologies as they're putting into plastics," Martin says. "We want businesses that are going to be here two decades from now. Not businesses that are going to cycle out like coal and steel did."

Learn more at tinyurl.com/Re-ImagineBeaver

those same geographic and climatic conditions will certainly contribute to inversions and make the situation worse."

Both the Beaver County and Belmont County, Ohio, cracker plants would sit near the banks of the Ohio River, which is the source of drinking water for millions of people. Additionally, the American Chemistry Council projects that the five potential cracker plants would require "approximately 500 miles of pipeline running along the Ohio River valley," as well as underground storage with "a capacity of 75 million to 100 million barrels" of natural gas liquids.

Robin Blakeman with nonprofit organization Ohio Valley Environmental Coalition expresses concern that an Appalachian petrochemical complex involving pipelines and storage alongside the Ohio River would greatly increase the likelihood of "catastrophic" water pollution.

"What they're planning to store in these underground caverns, that will be very near the river and transported in a

'six-pack' pipeline that will run along the river's edge, are very highly volatile natural gas liquid products," Blakeman says, referring to a type of segmented pipeline that transports six different compounds.

"There rarely are any environmental or health concerns mentioned about this thing, and yet we know it will convert the Ohio River Valley into a much larger and much more dangerous 'Cancer Alley,' similar to the Gulf Coast," Blakeman continues. "Are the number of jobs that would come from this, and the amount of economic development that may or may not come from this, is it all worth the very real potential of depleting or polluting the tap water for three to five million people?"

Beaver County resident Joanne Martin worries that the cracker plant is "the foot in the door" for the petrochemical industry.

"We don't want a plastics industry here," Martin says. "We don't want this to become toxic valley, and to mirror what happened in Houston and Louisiana; we want this to become a green belt."

"I get the sense that the Shell plant is like the tip of the iceberg and we don't see what's under the waterline," she says.

Expansion Plans

On Jan. 3, the U.S. Department of Energy invited Appalachia Development Group to apply for a \$1.9 billion loan guarantee for the storage hub. In March, a bill spearheaded by Sen. Joe Manchin, D-W.Va., that would ensure the hub qualifies for the federal loan cleared the U.S. Senate Energy and Natural Resources Committee.

"The Appalachian Storage Hub will allow West Virginia and its neighbors to realize the unique opportunities associated with Appalachia's abundant natural gas liquids like ethane, naturally occurring geologic storage and expanding energy infrastructure," Sen. Manchin told The Exponent Telegram in March.

The location of the potential Appalachian Storage and Trading Hub is still up in the air. Douglas Patchen — program director of West Virginia University's Appalachian Oil and Natural Gas Research Consortium, which conducts

Continued on next page

Petrochemical Valley?

Continued from previous page

research on fossil fuel technology — was a lead author on a geologic study to determine the region's potential for underground natural gas storage. The study looked at more than 2,700 sites, including mined-rock caverns, salt caverns and depleted oil and gas reservoirs, to determine the top 30.

"I don't think there will be a single location," Patchen says. "It might be called the Appalachian Storage and Trading Hub, but it might be multiple surface locations linked together by pipelines."

According to Patchen, the region needs a storage hub because "we don't realize any of the economic benefit of the natural gas liquids in this area."

"Right now, rather than shipping our products to Canada, Europe, South America, Asia or the Gulf Coast, there are other people here who would prefer to leave it here, keep it here and then use it here to expand the petrochemical industry and put people to work," he says.

Cathy Kunkel — an energy analyst for the Institute for Energy Economics and Financial Analysis, an organization that researches economic issues connected to energy and the environment — says a regional petrochemical industry run by big oil companies would be "extracting wealth from Appalachia to benefit those companies which are obviously not based here."

"The region has been dependent on extractive economies for the last hundred years or so, and that hasn't really ended well as far as lifting people out of poverty," says Kunkel. "I think before we just pursue another extraction-based industry, it's worth having a more deliberate conversation about other economic development pathways."

But President Donald Trump's administration seems intent on expanding the industry. After a trip to China last November, the president unveiled a memorandum of understanding with China Energy Investment Corp., which would purportedly funnel \$83.7 billion into West Virginia's natural gas and petrochemical industry over a 20-year period. The memorandum is not legally binding, however, and was not available to the public at press time.

According to Kunkel, it's too early to say what this agreement will mean for



Shell began construction on an ethane cracker in Beaver County, Pa., in November. Photo courtesy of Shell Cracker Impact

the region. "It could be anything from meaningless to game-changing," she says. "Who knows?"

Matt Kelso with The FracTracker Alliance, a nonprofit organization that analyzes oil and gas industry data, is skeptical about the document.

"My understanding is that it was sort of a token that the Trump administration brought back with them to say that it was a successful economic trip to China, but it remains to be seen as to how that's going to play out," Kelso says.

How Big of an Impact?

According to the American Chemistry Council's report, an Appalachian petrochemical industry including five cracker plants would create 100,818 jobs by 2025. This hypothetical analysis includes 25,664 direct jobs, 43,042 jobs in the supply chain and 32,112 jobs created by the ripple effect of workers spending their wages. But Kelso thinks these numbers should be taken with a grain of salt.

"When these new facilities get proposed, invariably they have ludicrously inflated job numbers attached to them, which then will eventually fall back to earth," he says.

When the American Chemistry Council put forth an economic analysis of the Beaver County cracker plant in August 2011, it estimated that 17,541 permanent jobs would be created, with 2,396 of those being direct jobs at the plant. The trade association also estimated that 11,000 construction jobs would be created.

In a March email, Shell spokesperson Joe Minnitte stated that the Beaver County plant would employ "approx-

mately 6,000 jobs during construction and 600 full-time job once the facility is operational."

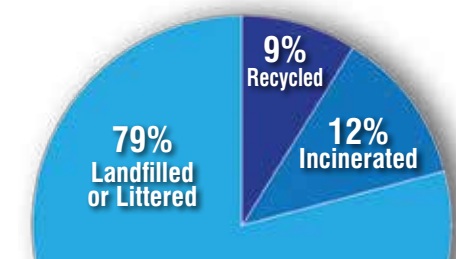
"These things are always over-inflated because it creates a good narrative upfront," says Kelso. "By the time anybody even contests those numbers and the real numbers are actually thrown out there, people just aren't paying attention anymore."

"But it doesn't matter because they've got their permits, they've got their state approval and they've got their subsidies," Kelso continues, "and that's what that number was intended to do."

As an incentive to build their cracker plant in Pennsylvania, the state gave Shell a 15-year tax amnesty window, along with a tax break valued at \$1.65 billion over 25 years.

From Rust Belt to Plastic Belt

Cracker plants produce tiny, plastic pellets that are then sent off to be shaped into any number of plastic consumer products — or, more likely, the packaging for them. According to the American Chemistry Council, the largest market for plastics in 2016 was



Between 1950 and 2015, an estimated 6.3 billion metric tons of plastic waste was generated worldwide. Of that, only 9 percent was recycled — the rest was incinerated or discarded. Source: 2017 study by Roland Geyer

packaging. While the council claims that plastic packaging is inherently environmentally friendly due to its light weight and versatile shape, it has contributed to a massive amount of waste.

An estimated 6.3 billion metric tons of plastic waste was produced between 1950 and 2015, according to a 2017 study lead by the University of California Santa Barbara. Of this, only 9 percent was recycled and 12 percent incinerated — the remaining 79 percent was disposed of as litter or into a landfill.

Additionally, roughly half of the plastics produced during that 65-year period was created in just the last 13 years — and if trends continue, the study states that "roughly 12,000 [billion metric tons] of plastic waste will be in landfills or in the natural environment by 2050." According to nonprofit foundation World Economic Forum, there is expected to be more plastic than fish in the ocean by 2050.

The petrochemical industry, however, is showing no signs of slowing down its plastic production. Bryce Custer, a commercial real estate advisor who established an industry team in 2016 to find the best sites for new petrochemical complexes, has stated that the Ohio River corridor has the potential to transition from the "Rust Belt" to the "Plastic Belt."

According to Kirk Jalbert with FracTracker, a common industry response to the issue of plastic waste is to recycle more.

"Every single one of these plastic bottles is attached to a fracking well some place," Jalbert says. "If you support the idea of expanding plastics because we can somehow do it responsibly on the end, can't we still do it responsibly in the beginning?"

"What we're talking about with five ethane crackers, or even just one ethane cracker, is locking the region into a long-term dependency on the oil and gas industry," he says.

Beaver County resident Joanne Martin shares concern about the ramifications of relying on a petrochemical mono-economy.

"When there is a shift or a change in the future, I think this region again will be at risk for high unemployment," Martin says. "And it will be difficult to transition at that point in time, unless there's concurrent business development and alternative industries." ♦

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Solar Financing Options

Now that it seems spring is finally here, let's talk about solar power. More than once we have had homeowners who wanted solar panels incorporated into their project but did not want to spend the additional money on top of their construction contract. Homeowners should know that they can apply for energy efficiency loans through some banks.

ElecTel Cooperative Federal Credit Union out of Raleigh will finance many energy efficiency measures, including

solar projects, that reduce the home's energy consumption. They offer up to 100 percent financing at competitive rates and terms. To qualify, residents must be a member of an electric co-op that partners with ElecTel. Currently, ElecTel partners with select co-ops in Virginia, Maryland and North Carolina — including Blue Ridge Energy.

Admirals Bank, based in Boston, has a home improvement loan program where you can apply for renewable ener-

gy financing. It is non-equity based and you are eligible to apply 90 days after receiving a Certificate of Occupancy. We encourage homeowners to research these types of loans if they are interested in reducing their home's carbon footprint.

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Country in 2008 and have been advocating for non-toxic, environmentally responsible and energy-efficient building ever since. Call/text (828) 964-3419 or visit sunnydayhomesinc.com



In Celebration of Vickie Terry

A Powerful Voice

By Michelle Mockbee

The first time I really got to know Vickie Terry was in 2006 at an organizer's meeting for the Appalachian Community Economics conference to build bridges between residents of Central Appalachia, academics, environmentalists, community organizations and activists. She immediately realized as a woman, mother, Appalachian resident of Tennessee, mountain advocate and representative of rural community organizations, that her voice was a minority not only at the table of this organizer's meeting for a conference, but for her community and nation.

That day, I heard her voice go from unsure and curious to powerful with the realization, right and need to proceed in life with that power, vigour and mountain love. She began to ask, "why are all these people who don't live where I am from getting to say what happens to my place and community, from universities to politicians in Washington, D.C.?"

When she found her voice, she belted it out and confronted those who may not have realized the importance of her place and environment to the world. She realized that those soft petals and fragrant wisps of scent you get in the woods from that wild rose have roots that stick and grow, and grow entwined together.

I know Vickie as a woman with a strong sense of family and an undying love for the protection of her home and community. She saw how the water in her mountains were the springs to the life and thriving water down river; and that the mountains being torn down resulted in the pain of not only her place and family but to those who eventually used that water in the cities below. And time and time again, it just mystified her as to how this was not obvious to those ripping out the very resources that gave life to a healthy environment and clean water for all.

To read the full versions of this tribute, please view the April/May issue at appvoices.org/thevoice

Remembering and Loving Vickie Terry

By Lyndsay Tarus

Vickie attended Week in Washington, hosted by the Alliance for Appalachia, several times over the years to share her story and experiences of living in a community ravaged by mountaintop removal coal mining with legislators and officials at the nation's capitol. She found her fight and her voice through community organizing, and along the way she inspired others to do the same.

Vickie made sure that her family and friends were always smiling. Even through her year-long battle with lung cancer, she loved and lived every moment she was given and inspired the rest of us to do the same. We are heartbroken to say goodbye, so instead, we'll say see you later, Vickie, on another plane, in another life just as sweet.

Through her hard work, Rose Ridge Retreat came to life as an outdoor living-learning classroom to raise awareness of sustainable living practices in



Photo by Jamie Goodman

Clairfield, Tenn. The retreat has an outdoor kitchen, space for camping, and hosts workshops on gardening, food preservation and home site planning. Vickie started building a sustainable and diverse environment and economy right in her own backyard; her leadership is a testament to what we envision for our communities across the region.

Naturalist's Notebook

Lungless Salamanders, Shrinking Habitat

By Hannah Gillespie

Climate change can cause salamanders' range to shrink, according to Loyola University Chicago biology professor Joseph Milanovich.

Milanovich studied the largest group of salamanders, a lungless genus known as *Plethodon*, and focused on the Appalachian Highlands. The 2010 study projected significant declines in suitable habitat within the region as early as 2020, with the more southerly distributed *Plethodons* experiencing at least a 20 percent range reduction if climate change was not mitigated.

Appalachia contains the greatest salamander diversity in the world, according to the Highlands Biological Station. But a 2014 study found that six *Plethodon* salamander species experienced a reduction in average adult body size over the previous 55 years, with *P. yonahlossee* impacted the most.

The team of researchers from the University of Maryland, Iowa State University and Clemson University state

that as the weather becomes hotter and drier, the cold-blooded amphibians have to work harder and use more energy to grow and survive. Due to their physiology and constant need for moisture, salamanders are particularly susceptible to environmental changes, according to the study, which drew off the work of former University of Maryland ecologist Richard Highton.

However, critics of the 2014 study like University of Florida population ecologist Ken Dodd noted that many related species in the region experienced increased body size or no change. "Other potential factors — such as long-term air pollution, habitat changes and forest-structure changes due to non-indigenous insects — weren't considered in the analyses," said Dodd in an interview with the journal *Nature*.

This study also compared salamanders captured in the wild to museum specimens. Milanovich, who has researched lungless salamanders and other amphibians since 2004, says

that approach was problematic because the researchers did not know what the conditions were like when the original animal was collected and therefore could not replicate those circumstances to make sure they had an accurate comparison.

The conditions where the underground-dwelling *Plethodon* salamanders are most active, according



Plethodon yonahlossee. Photo courtesy of Wikimedia Commons

to Milanovich, is at night in the rain. Without these conditions, it is possible that large females may not surface for food, and would not have been found by the researchers.

Salamander Spotlight: Plethodon Yonahlossee

The largest of the *Plethodon* genus and one of the most renowned salamanders of the Southeast is the *Plethodon yonahlossee* salamander, according to AmphibiaWeb. The first specimen was collected on Old Yonahlossee Road on North Carolina's Grandfather Mountain, where it derives its name.

P. yonahlossee is known for its size and distinct coloring — a rust pattern contrasted with its black base color and gray to white blotches on the sides. Males average a body length of 2.6 inches, not including the tail, while females average 2.8 inches.

P. yonahlossee lives in the southern Blue Ridge Mountains in Tennessee, North Carolina and Virginia typically between elevations of 1,430 to 5,699 feet. This is a small range compared to other *Plethodon* salamanders, which can live across the whole eastern United States, according to Milanovich.

This species dwells and breeds underground in forests and streams, with egg clusters hatching in late summer and fall. *P. yonahlossee* emerges at night to hunt for

flies, spiders, ants and other insects.

Yonahlossee salamanders also demonstrate a number of defense mechanisms to increase their chance of survival. The species can produce tail secretions that are noxious to potential predators like birds. They also become immobile when initially contacted, which makes them less likely to be detected by predators.

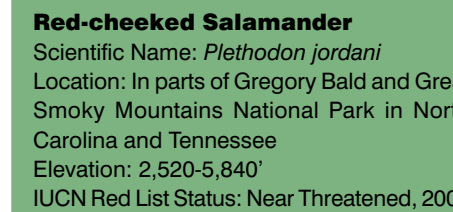
According to the International Union for Conservation of Nature, a coalition of governmental and non-governmental groups that tracks global conservation statuses, the population of *P. yonahlossee* was classified as Least Concern in 2014 due to its occurrence in protected, unthreatened areas. The IUCN's Red List of Threatened Species contains seven categories: Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct. However, the 2015 Virginia Wildlife Action Plan classified the species as a Moderate Conservation Need due to the significant declining trend. According to the IUCN, the population could benefit from less intensive timber harvesting practices.

Other Plethodon Salamanders



Plethodon cylindraceus
Photo copyright Blake Markwell

White-spotted Slimy Salamander
Scientific Name: *Plethodon cylindraceus*
Location: Much of Virginia, North Carolina and South Carolina, as well as parts of West Virginia and Tennessee
Elevation: 5,499'
IUCN Red List Status: Least concern, 2014



Plethodon jordani / Wikimedia Commons

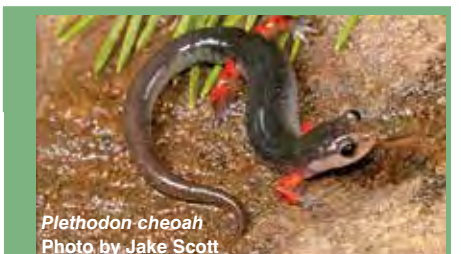
Red-cheeked Salamander
Scientific Name: *Plethodon jordani*
Location: In parts of Gregory Bald and Great Smoky Mountains National Park in North Carolina and Tennessee
Elevation: 2,520-5,840'
IUCN Red List Status: Near Threatened, 2004



Plethodon ventralis / Photo by Jake Scott

Southern Zigzag Salamander
Scientific Name: *Plethodon ventralis*
Location: Range is fragmented and includes portions of Southeast Kentucky, Southwest Virginia, East Tennessee and Western North Carolina
Elevation: Up to 1,900'
IUCN Red List Status: Least concern, 2014

Sources: International Union for Conservation of Nature Red List and amphibiaweb.org



Plethodon cheoah
Photo by Jake Scott

Cheoah Bald Salamander
Scientific Name: *Plethodon cheoah*
Location: The Cheoah Bald in Graham and Swain counties, North Carolina
Elevation: 3,199-5,000'
IUCN Red List Status: Vulnerable, 2004



Plethodon cinereus
Photo by Dave Huth

Red-backed Salamander
Scientific Name: *Plethodon cinereus*
Location: North Carolina and Northeast Tennessee
Elevation: Up to 4,800'
IUCN Red List Status: Least concern, 2015

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Duke Energy Raises Electricity Rates

On Feb. 23, the North Carolina Utilities Commission granted Duke Energy’s request to raise the rates of customers of its subsidiary Duke Energy Progress, which services part of the state.

While the increase was less than the utility requested, the commission allowed the monthly mandatory fee to jump from \$11.13 to \$14, an increase of 25 percent. Duke requested the rate hike in part to cover the cost of coal ash cleanup at basins across the state mandated after coal ash spilled into the Dan River.

“We are disappointed that the commission did not stand up for customers – especially those struggling to pay their bills,” said Gudrun Thompson, senior attorney at the Southern Environmental Law Center, in a statement. “While Duke is enjoying record profits, the commission undercut customers’ ability to reduce their energy use and lower their bills with cost-effective energy efficiency.”

Duke has also requested to increase the fixed rate for its Duke Energy Carolinas customers, from \$11.80 to \$17.79. — Elizabeth E. Payne

Kentucky Split Over Solar

In March, the Kentucky House of Representatives passed a net-metering bill that would allow the state to decide how much money residents with rooftop solar earn from surplus power they produce.

The current policy requires that utilities credit these residents the full retail rate for their surplus power. Proponents of the bill state that this disproportionately benefits residents with solar panels since they don’t pay to maintain the grid, while opponents argue that this change would make it easier for energy utilities to eliminate competition. — Kevin Ridder

Mine Permit Up for Renewal

On March 8, the Kentucky Division of Mine Permits held an informal conference on the Neely’s Creek Mine near Somerset, Ky. No mining has started at the site, and the mine’s permit is up for renewal. At the March meeting, 12 people spoke out against the mine and its potential impacts to nearby community members and the Sloans Valley and Neely’s Creek cave systems.

Friends of Sloan Valley, a grassroots group, is challenging the permit. While litigation is pending, comments regarding this permit can be sent to Director Jeff Baird at Jeff.Baird@ky.gov. — Matt Hepler

Mine Violations Continue in Raleigh County, WV

On Feb. 1, the West Virginia Department of Environmental Protection issued a notice of

violation to Alpha Natural Resources subsidiary Republic Energy for failure to maintain a haul road on the Collins Fork Surface Mine. This mine is part of Republic Energy’s complex of mountaintop removal mines on Coal River Mountain, which includes the Middle Ridge Mine, the recipient of 11 notices of violation since it began moving coal in 2015.

Republic has also applied for a revision to the Collins Fork permit that, if granted, would allow the company to delay reclamation and dump used tires on the site. The West Virginia DEP will be holding an informal conference to hear public comment on this permit revision on April 12 in Artie, W.Va. More information can be found at crmw.net. — Willie Dodson

Review of Mountaintop Removal’s Health Impact Terminated

In January, the U.S. Department of Interior’s Office of Surface Mining, Reclamation and Enforcement officially terminated a study that would review the human health impacts of living near mountaintop removal coal mining and released the study’s committee members.

The National Academies of Science, Engineering and Medicine’s project began in 2016, after the review of existing studies was requested by citizens and the West Virginia Department of Environmental Protection Agency and the Office of Surface Mining committed at least \$1 million.

The study was well under way when it was halted last August, after the DOI began reviewing grants and agreements in excess of \$100,000, due to the “changing budget situation.” Without funding, the study will not continue. — Hannah Gillespie

EPA Dismisses Coal Ash Civil Rights Case

The U.S. Environmental Protection Agency has dismissed a civil rights case brought by residents of Uniontown, Ala., who claimed their health problems were due to toxic coal ash from a 2008 spill in Harriman, Tenn., that was disposed of in a landfill near Uniontown.

Coal ash contains a number of toxins that can cause health problems. In Uniontown, residents report breathing difficulties, mental illness and cancer. Authorities have not conducted studies to determine a correlation.

Uniontown’s population is 90 percent black and 50 percent live below the poverty line. The group of residents who filed the Civil Rights Act complaint argued that this was a case of environmental racism.

“The protection we’ve got from the government is little to none,” resident Ben Eaton told The Guardian. “I can’t help but feel it’s because the population is mainly black and poor. This was forced on us.” — Ashley Goodman

TVA Proposes Fixed Cost Increases

By Elizabeth E. Payne

The Tennessee Valley Authority has proposed a revised rate structure that would [decrease the rate per kilowatt hour of power] and increase fixed costs to consumers. TVA claims the changes would be revenue neutral, but critics such as the Southern Alliance for Clean Energy argue the new model would reduce residential solar installations and burden low-income customers.

TVA is a federally owned utility that sells energy to 154 local power companies across most of Tennessee as well as parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia. Those local power companies would determine how to pass along changes in TVA’s wholesale rate structure to their customers.

Volunteer Electric Cooperative, which serves all or part of seventeen counties in East Tennessee, has spoken out against the change. In a Facebook post, the co-op wrote that “The rate change may be revenue neutral for TVA, but it will not be revenue neutral for VEC or for the members we serve.”

In a report released by the utility in March, TVA stated that its “cur-

rent energy prices over-incentivize consumer installation of [distributed energy resources],” which include residential solar panels. The proposed rate change would reduce the economic incentive for home solar.

While Cass Larson, a vice president of TVA, denied in a statement that the move was intended to discourage investments in renewable energy, environmental advocates argue that the utility isn’t doing enough to promote solar.

“These utilities operate in a public policy vacuum and the slow pace of solar reflects outdated thinking within the utility’s management,” the Southern Alliance for Clean Energy’s Bryan Jacob told the Times Free Press.

Opponents of TVA’s proposal — including SACE and Appalachian Voices, the publisher of this newspaper — argue that the rate structure would discourage investments in energy efficiency by removing customers’ ability to save money by saving electricity and would disproportionately impact low- and fixed-income households by increasing fixed costs.

The public comment period is open until April 9 and a decision is expected at the May 10 board meeting.

Toxic Dumping

Continued from page 13

to calculate the earthquake potential in Brookfield, Ohio, where Pittsburgh-based Highland Field Services, LLC, recently began construction on five proposed injection wells next to a 250-unit mobile home community and the town’s fire department and EMS.

“You’re looking at a magnitude 5 earthquake potential,” he says. “To me, that throws up a red flag.” He adds that a previously attempted injection well in Brookfield drilled through an abandoned mine, after which the company halted construction and spent \$100,000 to seal it. According to Beiersdorfer, the company never looked at an available map of mines.

“The regulatory agencies in this country have been captured by the industry they’re supposed to regulate,” he says. “Again, we had eight-and-a-half months of earthquakes in Youngstown and they were denying any connection between them all. Basically, in our case, they’ve changed the law. They’ve taken away local control and put it all with the Ohio Department of Oil and Gas.”

Felicia Mettler says she’ll continue fighting to change those laws to protect citizens from injection well hazards.

“My kids deserve clean water,” Mettler says. “They deserve air that they can breathe that’s not going to make them sick. They deserve a ground that’s safe to walk on, not man-made earthquakes. They deserve a better future.” ♦

Federal Spending Bill Sustains Appalachian Programs, Passes without RECLAIM ACT

By Thom Kay

Congress passed an omnibus spending bill in March that keeps the government running through September 30 and, unlike recent continuing resolutions, includes new spending.

Although the Trump administration’s budget proposal recommended cutting a number of federal programs that serve Appalachian residents, Congress instead maintained or increased funding in many of these areas.

The Appalachian Regional Commis-

sion, a regional economic development agency, saw its annual budget rise to \$155 million, an increase of \$9 million. The Economic Development Administration received \$30 million specifically to provide grants to struggling coal communities across the country. Several energy efficiency programs, including the Low Income Home Energy Assistance Program, were funded at equal or higher levels.

Congress also renewed the Abandoned Mine Land Pilot Program, which provides funding for states to clean up

abandoned coal mines and repurpose the sites for economic use. Kentucky, West Virginia and Pennsylvania will each receive \$25 million through the program, and Virginia, Ohio, Alabama and designated Native American tribes will each receive \$10 million.

Regional economic development and environmental advocates, including Appalachian Voices, the publisher of this newspaper, were disappointed that the spending bill did not include the RECLAIM Act, H.R. 1731, which is similar to the pilot program. The bill would ac-

celerate the spending of \$1 billion in the Abandoned Mine Lands Fund to clean up abandoned mine sites and repurpose them for an economically beneficial use. It was spearheaded by Rep. Hal Rogers, R-Ky., and had 40 bipartisan cosponsors.

The bill was supported by nearly the entire Appalachian congressional delegation, but the National Mining Association lobbied against the legislation and House Speaker Paul Ryan has prevented the bill from proceeding to the House floor for a vote.

EPA Proposes Major Changes to Federal Coal Ash Rule

By Elizabeth E. Payne

In March, the U.S. Environmental Protection Agency announced plans to dramatically change the regulations that monitor how coal ash is disposed of and stored. Coal ash is the toxic byproduct of burning coal for electricity.

After utilities spent more than \$100 million lobbying against the Obama-era regulations, the current administration has proposed giving more authority to states to regulate coal ash impoundment sites, pushing back deadlines for compliance with the federal rule and potentially revising the rules for how storage sites are built and operated.

“Today’s coal ash proposal embodies EPA’s commitment to our state partners by providing them with the ability to incorporate flexibilities into their coal ash permit programs based on the needs of their states,” EPA Administrator Scott Pruitt said in a statement when the plan was announced.

The federal agency estimates that the new rules would save utility companies between \$31 million and \$100 million annually in costs associated with complying to the stricter regulations.

Concurrently, analysis of groundwater monitoring samples taken in compliance with the Obama-era rules found elevated levels of cancer-causing, radioactive isotopes near unlined coal ash ponds nationwide.

“The data clearly show that nationwide we have a significant problem,” Lisa Evans — senior counsel at Earthjustice, an environmental legal group — told InsideClimate News.

Virginia Law Grants Large Utilities Less Regulation

In March, Virginia Gov. Ralph Northam signed an omnibus spending bill bringing significant changes to energy policy. The law was widely criticized by legislators and grassroots organizations — including Appalachian Voices, the publisher of this newspaper — as being heavily influenced by and largely benefiting Dominion Energy.

Although the law ended Dominion’s 2015 rate freezes that had allowed the utility to overcharge customers by hundreds of millions

of dollars, it restricts the ability of the State Corporation Commission to regulate future rates that utilities charge their customers. The commission is tasked with ensuring that regulated monopolies like Dominion act in the public’s best interest.

Additionally, the law allows Dominion to keep most of the customer overcharges to spend on new infrastructure. Opponents of the law argue that this will prevent the SCC from issuing customer refunds and lowering Dominion’s artificially inflated rates.

“This means that SCC’s job going forward will simply be to rubber stamp Dominion’s decisions rather than independently scrutinizing the proposals’ merits,” Del. Mark Keam wrote in a Washington Post op-ed. Additionally, Del. Keam called for a “prohibition” on political campaign contributions from Dominion.

The law also eased the regulatory path for 5.5 gigawatts of new renewable energy projects, but did not make them mandatory. — Kevin Ridder

Tennessee Bill Would Change Mining Oversight

A bill that would shift control of coal mine permitting and oversight from the federal Office of Surface Mining Reclamation and Enforcement to the state of Tennessee is making its way through the state legislature. As of March 28, the bill had passed the state Senate and the House Finance, Ways and Means subcommittee.

Tennessee is the only active coal mining state that does not

have state-level primacy over enforcement of the Surface Mining Control and Reclamation Act. The program transferred to the federal mining agency in 1984 when the state repealed its surface mining law.

Opponents fear that transferring oversight to the Tennessee Department of Environment and Conservation would weaken community and environmental safe-

guards. Proponents believe that the change would speed up coal mine permitting and increase jobs.

Funding for the program would rely partially on federal grants and partially on coal industry production taxes. With only three mines currently producing coal in Tennessee, local citizens worry that funding shortfalls will negatively impact the state’s ability to implement an effective program. — Erin Savage

115 TH CONGRESS: Below are recent congressional bills and amendments on environmental issues and how central and southern Appalachian representatives voted. To see other recent votes, or for congressional representatives outside of the five-state area, visit congress.gov. ● = pro-environment vote ✗ = anti-environment vote ○ = no vote	Kentucky		Tennessee			North Carolina		Virginia			West Virginia					
	T. Massie (R) KY-04	H. Rogers (R) KY-05	A. Barr (R) KY-06	P. Roe (R) TN-01	J. Duncan (R) TN-02	Fleischman (R) TN-03	S. Desjarlais (R) TN-04	V. Foxx (R) NC-05	P. McHenry (R) NC-10	M. Meadows (R) NC-11	T. Garrett (R) VA-05	B. Goodlatte (R) VA-06	M. Griffith (R) VA-09	D. McKinley (R) WV-01	A. Mooney (R) WV-02	E. Jenkins (R) WV-03
HOUSE																
H.R. 1119, the Satisfying Energy Needs and Saving the Environment Act, would permanently exempt power plants that burn coal waste from complying with certain air pollution standards, and allow them to limit either sulfur dioxide or hydrogen chloride emissions, not both. AYES 215 NOES 189 NV 26 ... PASSED	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
H.R. 1917, the Blocking Regulatory Interference from Closing Kilns Act, prohibits the EPA from requiring that brick and clay manufacturing comply with Clean Air Act standards until court review of the rules. It also allows the public to delay complying with air emission standards for new wood stoves for three years. AYES 234 NOES 180 NV 16 ... PASSED	X	X	○	X	X	X	X	X	X	X	X	X	X	X	X	X



Pushing for Solar Freedom and Utility Accountability in Virginia

We traveled to Richmond, Va., on Feb. 19 with concerned citizens and fellow members of Southwest Virginia's New Economy Network and Virginia Organizing to speak to Virginia state representatives about a number of issues, including Del. Terry Kilgore's solar bill.

Del. Kilgore introduced H.B. 1252, legislation that would make renewable energy more attainable to Virginia nonprofits and tax-exempt groups who are electricity customers of Appalachian Power Company and Old Dominion Power. Currently, these tax-exempt customers are not eligible for existing federal tax incentives for renewable energy.

The bill passed unanimously out of the House but did not get a chance to make it through the Senate, despite broad support from local planning districts, development authorities and higher education institutions. Voting on H.B. 1252 was delayed for one year, though the bill still has a chance of passage in 2018 if attached as an amendment to another bill. Del. Kilgore says he remains committed to its passage, and we are, too!

During Virginia's legislative session, we also opposed a massive rate bill backed by Dominion Energy. Though the bill passed, citizen voices forced legislators to take the unusual step of scrutinizing the utility giant's requests.

In Senate Bill 966, Dominion designed a variety of mechanisms to avoid future regulatory oversight and unfairly pocket hundreds of millions or more of its customers' money. Yet due to a groundswell of constituent pressure and hard work by a variety of consumer and environmental advocates, including Appalachian Voices, more and more legislators now are asking: "Should a monopoly utility write the laws that govern monopoly utilities?" The answer, of course, is "no."

Visit appvoices.org/frontporchblog to learn more.

Robeson Rises New Documentary Looks at Potential Impacts of Pipeline in Eastern N.C.

On March 22, Appalachian Voices co-hosted a screening of the community film *Robeson Rises* with EcoRobeson, Green Hero Films, Working Films and the Carolina Civic Center. The film details the real and potential impacts of the proposed Atlantic Coast Pipeline and the climate change-induced disaster of Hurricane Matthew.

The film covers the inception of EcoRobeson's organizing against the Atlantic Coast Pipeline, the potential threat to landowners and the environmental injustices of the pipeline, which could run through several of North Carolina's poorest rural counties and 25 percent of the state's indigenous population. The film also covers the community's concerns about how the pipeline could contribute to future climate change crises.

Seventy-five community members attended the screening and panel discussion. Four of the panelists were featured in the film and they were joined by a UNC-Pembroke climate professor. The film can be watched in its entirety at RobesonRises.com and is available for free for community screenings.



Top row, from left: Producer Bradley Bethel and Robeson community members Robie Goins, Jordan Revels, Adrienne Kennedy, Donna Chavis and Shalonda Regan. Bottom row, from left: film staff and advocates, including our N.C. Program Manager Amy Adams, second from right.



Appalachian Voices BUSINESS LEAGUE
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Joining Appalachian Voices at the \$35 level or above during our Membership for the Win campaign is a double win! You can feel good knowing your contribution is going to an effective organization you can trust and you'll be entered into a drawing to win a gift at the end of the month of your enrollment. April's drawing will be for a brand new Patagonia backpack, modeled here by Appalachian Voices' Virginia Field Coordinator Lara Mack. Become a member today at appvoices.org/join



Become an Appalachian Voices member and be entered to win this Patagonia backpack!



Onward in the Pipeline Fight! A note from our Virginia Field Coordinator Lara Mack

Communities and organizations across West Virginia, Virginia and North Carolina have done phenomenal work to challenge the Mountain Valley and Atlantic Coast pipelines over the last four years. Though these unnecessary fracked gas infrastructure projects were never outright denied, as they should have been, it's because of the phenomenal activism and organizing of so many that these pipelines have experience huge setbacks.

But these developers will stop at nothing to push these projects through in any way they can. Though some final permits, approvals and plans are still needed, the

pipeline developers have sued landowners to gain immediate access to private land, and have begun felling trees in nearly all the counties the pipelines go through as well as the public lands we all hold so dear.

Our efforts to stop these projects are as crucial as ever. Folks along the lengths of both pipelines are mobilizing at record speed to monitor all pipeline construction activity and call out any misstep as soon as possible. And as critical monitoring happens on the ground, the battle to stop these pipelines also continues in the courts. Appalachian Voices and partner organizations are involved in numerous

lawsuits attacking the faulty system, laws and agencies that approved these pipelines in the first place.

People are recommitting to this resistance every day and developing new, powerful ways to resist these pipelines at this unique stage. Though most politicians haven't realized that fracked gas is the next big fossil fuel extraction industry that will wreck public health, water and the environment, folks all across the country know the state we are in. People are literally getting in the way of pipeline construction all across the continent. Pipelines will be stopped. We won't.

Contest Brings Energy Efficiency to North Carolina High Country Homes

The North Carolina Energy Savings team is hosting a Home Energy Makeover contest in the state's High Country. Five semi-finalists will win a home energy audit to determine which upgrades would be most beneficial, and one winner will receive the grand prize of \$4,000 in home energy upgrades, such as attic insulation and duct sealing.



This contest, sponsored by the High Country Nonprofit Sustainability Initiative and the Blumenthal Foundation, was planned in response to soaring winter electric bills and is open to members of

Blue Ridge Energy, a rural electric cooperative that is owned by its members and serves the High Country. There is currently not an adequate system in place for

Blue Ridge Energy members who do not qualify for free federal weatherization assistance to finance home improvements without having to take on a loan.

We will also host a block party (and maybe more!) to bring people together to learn about home energy improvements and the power that electric co-op members have within their utility.

Apply by April 20 at appvoices.org/energycontest. To learn more about the contest or block parties, call or email AmeriCorps Associate Becca Bauer at 828-262-1500 or becca@appvoices.org

Standing Up to TVA and Engaging Electric Co-op Members in Tennessee

Our Tennessee Energy Savings Team has been expanding our Electric Co-op Member Education Series throughout the Powell Valley Electric Cooperative service area. In early March, our team hosted a second workshop in Claiborne County, Tenn to inform mem-

bers on special programs available to electric cooperatives, including inclusive financing programs for energy efficiency. At press time, the Tennessee team was preparing for additional "Member 101" meetings in Grainger and Union counties. These workshops aim to provide tools

and support for members to get involved in the decision-making of their co-ops.

We're also fighting TVA's proposed changes to their rate structure, which would increase residents' bills and negatively impact financing opportunities for solar and efficiency projects (read more on page 29). Our team is joining with SOCM, Volunteer Energy Cooperative and other local organizations to help generate public response to the rate structure prior to the comment period closing date of April 9. And we will continue working to keep the public involved in TVA's rate structure process as the May TVA board meeting approaches.

For more information about getting involved in your electric cooperative or stopping TVA's proposed rate changes, contact Tennessee Outreach Coordinator Bri Knisley at brianna@appvoices.org or (865) 291-0083.

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YOUR ACTION NEEDED

ENERGY SAVINGS OF APPALACHIA
 A PROGRAM OF APPALACHIAN VOICES

After nearly a decade of being a leader in clean energy, the Tennessee Valley Authority is proposing a new rate structure that will impose a fixed "Grid Access Fee" while lowering wholesale rates. This is despite studies that show that such rate structures discourage investments in energy efficiency and renewable energy, while increasing energy costs for many low-income residents.

If you live in the Tennessee Valley, you are likely served by a power company that buys its electricity from TVA, and you can help stop this from happening.

Call your local power company and ask them to oppose TVA's proposed change to its rate structure. But do so before TVA's Board Meeting on May 10th!

For more information, call Rory McIlmoil at (828) 262-1500, or email Rory@AppVoices.org.

Learn more about energy efficiency and our work at appvoices.org/energysavings.



Appalachian Voices is committed to protecting the land, air and water of the central and southern Appalachian region. Our mission is to empower people to defend our region's rich natural and cultural heritage by providing them with tools and strategies for successful grassroots campaigns.

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This detail of a timed self-portrait by Tom Moors of Simpsonville, S.C., captures the moment he jumped into the cold, crystal clear waters of Lake Jocassee during a summer sunrise. According to Moors, it took several takes of jumping into the chilly water to get the shot just right. The photo, titled "Jump In," is a finalist in the 15th Annual Appalachian Mountain Photography Competition's Adventure category. The exhibit will be on display at the Turchin Center for the Visual Arts in Boone, N.C., through June 2, 2018. Learn more at appmntnphotocomp.org. For more of Moors' work, visit tommoors.com.

Help us protect Appalachia's land, water and people.



This stately maple tree has grown on Lynn and Bill Limperts' land for between 300 and 400 years, but it stands directly in the path of one of the major fracked-gas pipelines that companies are attempting to build across our region.

Appalachian Voices has joined with citizens and groups throughout the area to fight these destructive, unnecessary, and financially and environmentally costly projects.

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