



October 17, 2011

Maureen T. Hyzer, Forest Supervisor  
Attn: George Washington Plan Revision  
George Washington & Jefferson National Forests  
5162 Valleypointe Parkway  
Roanoke, VA 24019-3050  
[mhyzer@fs.fed.us](mailto:mhyzer@fs.fed.us)  
[comments-southern-georgewashington-jefferson@fs.fed.us](mailto:comments-southern-georgewashington-jefferson@fs.fed.us)

Re: Support for prohibition on horizontal drilling on future federal oil and gas leases and request for further study of impacts of vertical drilling proposed in George Washington National Forest draft revised forest plan.

Dear Ms. Hyzer:

We write to express our strong support for the U.S. Forest Service's proposal to prohibit horizontal drilling on future federal oil and gas leases in the George Washington National Forest ("GW") and to encourage further study of and, at a minimum, reasonable limitations on areas available for potential vertical gas drilling in the revised forest plan. Currently the plan is offered for public comment until October 17.

The GW contains about 1.06 million acres, primarily in Virginia, with some in West Virginia. The GW is a direct source of drinking water for about 262,600 people in local communities in and around the Shenandoah Valley, including Staunton and Harrisonburg.<sup>1</sup> Further, the GW is located entirely within the watershed of the James and Potomac Rivers, which supply drinking water to Richmond, VA, and Washington, D.C., among other cities, and ultimately flow into the Chesapeake Bay.<sup>2</sup> The GW is the largest federal landholding in the Bay watershed.<sup>3</sup>

This forest plays a key role in the local and regional culture and economy. The rugged national forest lands in the Allegheny and the Blue Ridge Mountains set the recreational and scenic backdrop for the Valley's farms and communities, and its waters sustain them. The GW is very popular for all forms of outdoor recreation, such as hunting, fishing, hiking, camping, mountain biking, bird-watching, and more. More than 9.2 million people live within a couple of hours' drive of the forest,<sup>4</sup> and nearly a million people visit the GW annually.

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<sup>1</sup> Wild Virginia, State of Our Water, at 3 (2008).

<sup>2</sup> Draft Revised Forest Plan at 1-5.

<sup>3</sup> Id.

<sup>4</sup> Draft EIS for Revised Forest Plan at 3-280 (2011).

The GW also shelters cold mountain streams, which support some of the strongest brook trout populations in the southeast.<sup>5</sup> Its forests provide important habitat for game and non-game wildlife, including black bear and migratory songbirds. The GW supports eight federally-listed threatened and endangered species and dozens of other rare fish, wildlife and plants.<sup>6</sup> The GW's forests and watersheds are perhaps the most intact of any national forest in the eastern U.S., as the GW has more land with few or no roads than any other eastern national forest.<sup>7</sup>

Gas and oil development in and around the GW is minimal. There are no active, producing natural gas wells on the GW and there never have been (exploratory wells drilled in the 1970s and 1980s were dry holes).<sup>8</sup> Moreover, there is little history of gas production on private lands surrounding the GW in Virginia.<sup>9</sup> The federal government owns the mineral rights to the vast majority (84%) of the GW, and most of those rights have not been leased for gas development.<sup>10</sup> Currently, only 12,412 acres (1.4% of GW's federal mineral ownership) are subject to federal oil and gas leases.<sup>11</sup>

There are as yet no Marcellus Shale gas wells in Virginia, so the Forest Service and the state agencies lack experience with the horizontal drilling and hydraulic fracturing used in the Marcellus. About half of the GW is underlain by Marcellus.<sup>12</sup> However, as the Forest Service noted, the GW is located in the Ridge and Valley region, where the Marcellus "is folded and fractured, so the ability to develop it using horizontal drilling is questionable."<sup>13</sup>

The development of Marcellus Shale natural gas—from drilling, to distribution, to waste management—poses a number of risks to environmental and public health. Horizontal drilling and large-volume hydraulic fracturing requires about 4-5 million gallons of water per well, and perhaps more (figures vary).<sup>14</sup> Water mixed with chemicals, including known toxics, is pumped down wells at high pressure to fracture rock and release natural gas. There are concerns about adequacy of water supplies and instream flow, particularly if fracturing water is withdrawn from small headwater streams. Natural gas drilling using hydraulic fracturing has been linked to contamination of drinking water wells with methane gas. There also is concern about potential contamination of groundwater with fracturing fluid, which is being studied. Roughly 1/3 of the fracturing fluid (again, figures vary) returns to the surface as flowback, often mixed with naturally occurring brines and/or radioactive materials, and must be disposed of. Millions of gallons of flowback, which public wastewater treatment plants often cannot adequately treat, have been discharged to rivers and streams, and flowback has been accidentally spilled into waterways as well. Land application of flowback has killed trees and other vegetation, as

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<sup>5</sup> Trout Unlimited for Eastern Brook Trout Joint Venture, *Eastern Brook Trout: Status and Threats*, at 10 (2006).

<sup>6</sup> DEIS at 1-2, and at Appendix F-52 to 54.

<sup>7</sup> The GW has about 386,700 acres of roadless areas. DEIS at 3-225.

<sup>8</sup> DEIS, Appendix K, BLM, RFD Scenario, at K-6 to 7 (2010).

<sup>9</sup> Id. The Thornwood-Horton Field in Pocahontas County, WV, is a conventional gas field adjacent to a small portion of the GW in Highland County, VA. One well, not located on the GW, in that field drains gas from beneath some GW land. BLM RFD at K-7.

<sup>10</sup> DEIS at 3-312.

<sup>11</sup> DEIS at 3-313.

<sup>12</sup> DEIS at 3-317

<sup>13</sup> USFS, FAQ re Draft Revised Plan, at 10 (2011).

<sup>14</sup> BLM RFD at K-12; DEIS at 3-331.

documented in a study on the neighboring Monongahela National Forest.<sup>15</sup> Drilling also produces other wastes, such as tons of drilling cuttings which must be dealt with. Finally, this type of gas development is a major industrial activity with a large footprint. It fragments forests and wildlife habitat<sup>16</sup> and industrializes rural areas with well-pads and associated brine and flowback pits, compression tanks, access roads, traffic by hundreds of trucks, pipelines and compressor stations. It also can adversely affect air quality.

This type of gas development would harm the GW's many natural values, including: drinking water supplies; high-quality rivers and streams; brook trout and other aquatic species; wildlife and their habitats; outdoor recreation experiences; scenic views; air quality; and the forest's contribution to the existing local economy, which is based on tourism and agriculture. Further, it likely would seriously interfere with the Forest Service's ability to meet its obligations under the National Forest Management Act and other authorities to provide for fish, wildlife, watersheds, outdoor recreation, and conservation of soil and water resources on the GW.<sup>17</sup>

In fall 2010, three counties (Augusta, Rockingham, and Shenandoah) and two cities (Staunton and Harrisonburg) in the Shenandoah Valley requested that the Forest Service prohibit or adopt a moratorium on horizontal drilling and/or hydraulic fracturing on the GW, citing concerns about water quality, recreation and other resources, as well as the industrialization of public national forest lands. Many local citizens, as well as conservation organizations, made the same request.

Due to the documented risks of horizontal drilling and high-volume hydraulic fracturing and the numerous public benefits that could be impacted through this type of gas drilling, our organizations feel strongly that the Forest Service would be well justified in prohibiting horizontal drilling on future federal oil and gas leases in the GW.

While we support the GW's proposal to ban horizontal drilling, we are concerned that, under this proposal, roughly 993,200 acres (about 93%) of the GW would be available for federal leasing for vertical drilling.<sup>18</sup> Given that about 90% of U.S. gas wells are fracked,<sup>19</sup> such vertical drilling would, in all likelihood, also involve hydraulic fracturing. Vertical drilling also poses risks to ground- and surface- water quality, fragments wildlife habitat, and can disrupt recreation, among other impacts. The draft EIS does not adequately analyze the specific likelihood and significance of impacts from the vertical drilling that could occur in the GW under this proposal. The Forest Service should conduct further study before making a decision on the lands available for vertical drilling. At a minimum, the plan should make unavailable for leasing watersheds that supply local drinking water and other priority watersheds, as well as

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<sup>15</sup> Mary Beth Adams, et al., USDA-FS, Northern Research Station, *Effects of Development of a Natural Gas Well and Associated Pipeline on the Natural and Scientific Resources of the Fernow Experimental Forest*, General Technical Report NRS-76 (Jan. 2011).

<sup>16</sup> Nels Johnson, The Nature Conservancy, *Pennsylvania Energy Impacts Assessment – Report 1: Marcellus Shale Natural Gas and Wind* (Nov. 2010).

<sup>17</sup> See, e.g., 16 U.S.C. § 1604(g)(3)(A).

<sup>18</sup> DEIS at 3-305.

<sup>19</sup> BLM RFD at K-11.

other important natural, recreational, or scenic areas (for example, Special Biological Areas, roadless areas, etc.). Again, we applaud the Forest Service's sensible proposal to prohibit horizontal drilling on future federal oil and gas leases, and we urge you to include such a ban in the final forest plan. We also hope that the GW will study more carefully the potential impacts of vertical gas drilling before making a decision and, at a minimum, limit the lands available for leases for vertical drilling. Together, these steps would go a long way toward addressing legitimate concerns about the risks of future oil and gas development on the nationally significant lands and waters of the George Washington National Forest.

Thank you for your consideration of these comments. Please feel free to contact us for more information. The Choose Clean Water Coalition contact is Ryan Ewing, 443-927-8047, [ewingr@nwf.org](mailto:ewingr@nwf.org).

Sincerely,

Adkins Arboretum  
Alliance for Sustainable Communities  
American Rivers  
Audubon Maryland-DC  
Audubon Naturalist Society  
Audubon Society of Northern Virginia  
Baltimore Jewish Environmental Network  
Chapman Forest Foundation  
Chesapeake Audubon Society  
Chesapeake Climate Action Network  
Chesapeake Conservation Landscaping Council  
Chesapeake Wildlife Heritage  
Citizens for Smart Growth in Allegany County  
Clean Water Action  
Community Alliance for Preservation, Rockingham County  
Community and Environmental Defense Services  
Conservation Voters of Pennsylvania  
Corsica River Conservancy  
Defenders of Wildlife  
Delaware Nature Society  
Dorchester Citizens for Planned Growth  
Earthworks  
Environmental Working Group  
Float Fisherman of Virginia  
Food & Water Watch  
Friends of Dyke Marsh  
Friends of Herring Run Parks  
Friends of Lower Beaverdam Creek  
Friends of Powhatan Creek Watershed

Friends of the Blue Ridge Mountains  
Friends of the Middle River  
Friends of the Nanticoke River  
Friends of the North Fork of the Shenandoah River  
Friends of the Rivers of Virginia  
Izaak Walton League of America  
Little Falls Watershed Alliance  
Lynnhaven River NOW  
Maryland League of Conservation Voters  
Maryland Native Plant Society  
Mattawoman Watershed Society  
National Aquarium  
National Parks Conservation Association  
National Wildlife Federation  
Natural Resources Defense Council  
Nature Abounds  
One Thousand Friends of Maryland  
Peach Bottom Concerned Citizens Group  
Pennsylvania Council of Churches  
Pennsylvania Organization for Watersheds and Rivers  
Piedmont Environmental Council  
Potomac Conservancy  
Potomac Riverkeeper  
Richmond Audubon Society  
Sassafras River Association  
Savage River Watershed Association  
Save Western Maryland  
Scenic 340 Project  
Shenandoah Forum  
Shenandoah Riverkeeper  
Shenandoah Valley Network  
Sierra Club- Virginia  
Sierra Club- Maryland  
Southern Environmental Law Center  
St. Mary's River Watershed Association  
Stewards of the Lower Susquehanna  
The Center for the Celebration of Creation  
Virginia Conservation Network  
Virginia Forest Watch  
Virginia League of Conservation Voters  
Virginia Organizing  
West Virginia Rivers Coalition  
West/Rhode Riverkeeper  
Wetlands Watch  
Wicomico Environmental Trust  
Wild Virginia