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November 27, 2012

Scott Fitzwilliams, Forest Supervisor
White River National Forest- Oil and Gas Leasing DEIS
P.O. Box 1919
Sacramento, CA 95812

RE: White River National Forest Oil and Gas Leasing EIS #29938

Dear Mr. Fitzwilliams,

Thank you for the opportunity to comment on the White River National Forest Oil and Gas Leasing Draft Environmental Impact Statement (DEIS). Roaring Fork Conservancy (RFC) is concerned about the potential detrimental effects to water resources posed by oil and gas exploration within the watershed. However, recognizing your efforts to balance both environmental and economic interests, we write in general support of Alternative C but with concerns related to the proposed leasing of three vulnerable areas in the Thompson Divide region within the Roaring Fork Watershed.

Alternative C's No Surface Occupancy (NSO) and Controlled Surface Use (CSU) stipulations provide valuable natural resource protections. However, we believe three areas within the region remain unsuited for any oil and gas development, and we respectfully request the designation of these areas as closed for leasing. They include: Coal Basin (including Coal Creek and its tributaries), Thompson Creek Watershed (including North, Middle, and South Thompson Creeks), and Fourmile Creek Watershed.

Coal Basin

Coal Basin suffers from degraded water quality and stream habitat resulting partially from fifty years of large-scale coal mining activities. As noted in the DEIS, Coal Basin has widespread areas of unstable and erodible slopes and tailings piles, leading to excessively large sediment loads.¹ These loads are more extreme during spring runoff and heavy thunderstorms, stressing aquatic life and impeding streamflow. The US Forest Service's Watershed Condition Classification ranked the Coal Creek Watershed as Functioning at Risk with poor aquatic biota, riparian/wetland vegetation, and road and trail conditions; and fair water quality, aquatic habitat, soil,

¹ U.S. Department of Agriculture, Forest Service, August 2012. White River National Forest Oil and Gas Leasing Draft Environmental Impact Statement (DEIS), p. 3-88.

and terrestrial invasive species conditions

(<http://apps.fs.usda.gov/WCFmapviewer/>).² Sediment concerns are long-standing, as Coal Creek has been on past state and RFC watch lists for suspended solids.³

Heavy sedimentation has downstream impacts on the Crystal River, which the DEIS rated as having Moderate-High Watershed Sensitivity and American Rivers recently named as one of *America's Most Endangered Rivers*.⁴ Even with proposed NSO stipulations, the Crystal River (including portions of Coal Creek) is projected to be a focal area for surface disturbance from oil and gas development.

Development of this area would undercut ongoing efforts to restore the Coal Basin landscape and reduce downstream impacts on the Crystal River.⁵ Reclamation activities occurred on the Coal Basin Mines from 1994-2000. Seeing the need for additional mitigation, the White River National Forest has partnered with several organizations in supplemental reclamation activities. Current projects include road reclamation, reshaping the stream to increase alluvial areas, and a native grass/grazing study. Regarding new development, the construction and use of roads, well platforms and pipelines would aggravate existing stream bank instability and consequent high-sediment loading in Coal Creek, which already contributes the highest suspended solid concentration of any tributary to the Crystal River. Any additional construction, as noted above, would likely impair past, present, and future reclamation and re-vegetation efforts.

Thompson Creek

Thompson Creek is a highly pristine watershed with favorable ratings for usable groundwater.⁶ Recent biomonitoring study results assign Thompson Creek the highest Multi-Metric Index (MMI) score for aquatic life in the valley, suggesting good

² U.S. Department of Agriculture, Forest Service, November 2012. Watershed Condition Class and Prioritization Information, <http://apps.fs.usda.gov/WCFmapviewer/>.

³ Roaring Fork Conservancy, 2006. Roaring Fork Watershed Water Quality Report, p. 13, <http://www.roaringfork.org/images/publications/2006rfwwqreportFINAL.pdf>.

⁴ American Rivers, May 2012. Crystal River Among America's Most Endangered Rivers, <http://www.americanrivers.org/assets/pdfs/mer-2012/crystal-press-release.pdf>.

⁵ Restoration progress and plans were discussed at a May 2012 Restoration Workshop, co-hosted by the Forest Service and the Roaring Fork Conservancy. For a summary of this workshop, see Roaring Fork Conservancy, June 2012. Coal Basin and Crystal River Area Restoration Workshop, http://www.roaringfork.org/pub/collaborative/COAL_BASIN_WORKSHOP_FINAL_REPO_RT_6-8-12pdf.pdf.

⁶ See Noblis, 2009. Groundwater Resource Evaluation for Lands with Oil and Gas Development Potential (Western Project Area), White River National Forest, Colorado, reports for Task A-02, and A-03 (cited in DEIS at p. 3-106).

overall stream health.^{7,8} It hosts at-risk populations of Colorado River cutthroat trout (a Forest Service Sensitive Species) and provides habitat for elk and the Canada lynx (a Threatened Species). The Thompson Creek area is valued for its high biodiversity and remote character by outdoor enthusiasts, whose recreation activities support Colorado's economy and depend on healthy lands.⁹

The watershed's value and vulnerability is well established. Colorado State University's Colorado Natural Heritage Program (CNHP) has identified Middle Thompson Creek as a Conservation Area of Concern because of the area's exceptional biodiversity.¹⁰ Portions of Thompson Creek fall within the BLM Thompson Creek Area of Critical Environmental Concern and have also been deemed eligible for Wild and Scenic River status.¹¹ The US Forest Service's Watershed Condition Classification ranked the Thompson Creek Watershed as Functioning at Risk with poor road and trail condition and fair aquatic biota, riparian/wetland vegetation, water quantity, and aquatic habitat condition.¹²

Oil and gas development could damage this high quality, biologically diverse habitat by contaminating both surface water and groundwater through chemical spills and leaks. The DEIS rates the Outlet Roaring Fork River (including Thompson Creek

⁷ The Multi-Metric Index provides a rating of overall stream health based on the presence, absence, and abundance of specific macroinvertebrates.

⁸ Roaring Fork Conservancy and Timberline Aquatics, Inc., July 2012. A Review of Aquatic Life and Stream Health in the Roaring Fork Watershed, p. 45, http://www.roaringfork.org/2011_Roaring_Fork_Watershed_Macroinvertebrate_Report_07.19.12.pdf.

⁹ A 2011 study of Colorado River-basin states reports that recreational activity along the Colorado River generates \$17.0 billion annually in retail sales (including sales for equipment, travel, apparel, and maintenance and repair of equipment). Colorado benefits from \$9.6 billion in annual economic activity resulting from recreational expenditures. See Southwick Associates, May 2012. Economic Contributions of Outdoor Recreation on the Colorado River & its Tributaries (prepared for Protect the Flows), p. 2, http://protectflows.com/wp-content/uploads/2012/05/Colorado-River-Recreational-Economic-Impacts-Southwick-Associates-5-3-12_2.pdf.

¹⁰ Colorado State University, Colorado Natural Heritage Program, 2012. Level 4 Potential Conservation Area (PCA) Report, Middle Thompson Creek, http://www.cnhp.colostate.edu/download/documents/pca/L4_PCA-Middle%20Thompson%20Creek_8-30-2012.pdf.

¹¹ Tetra Tech, March 2007. Final Wild and Scenic River Eligibility Report. Prepared for the U.S. Bureau of Land Management Kremmling and Glenwood Springs Field Offices, Colorado, p. 3-82, http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/land_use_planning/rmp/kfo-gsfo/KFOWSR.Par.97085.File.dat/FinalEligibilityReport_Mar2007.pdf.

¹² U.S. Department of Agriculture, Forest Service, *supra* note 2.

drainage) as having High Watershed Sensitivity, yet this area, along with portions of North and South Thompson Creeks, would experience some of the greatest surface disturbances from development. Additionally, the Environmental Protection Agency's (EPA) DRASTIC model indicates that groundwater in Thompson Creek and other portions of the Piceance Basin sedimentary rock aquifer are the most likely to experience adverse effects.¹³

Development would not only threaten special status species and high sensitivity water resources, but would also exacerbate unstable soil conditions in the Thompson Creek drainage area due to the soft sedimentary rocks and erodible Cretaceous shales. These formations are prone to landslides and other slope instability problems, as evidenced by a large landslide deposit in the North Thompson Creek drainage. Disturbance from road building, erosion, and stream channelization would likely aggravate these geologically fragile conditions which, in turn, could jeopardize this outstanding habitat.

Fourmile Creek

Fourmile Creek suffers from extremely low flow due to hydropower and irrigation diversions, along with ongoing ski-based development pressures from Sunlight Mountain Resort.¹⁴ Low flows are insufficient to maintain a functioning stream system and mitigate anthropogenic sources of pollution. Biomonitoring study results suggest the presence of organic pollution in the Creek and associated minor stress to aquatic life along a portion of the Creek.^{15,16} Key species that rely on this habitat include the Northern Leopard Frog (a Forest Service Sensitive Species), the Canada lynx (a Threatened Species), and elk. In addition, Fourmile Creek is an important tributary for brown trout spawning. The CNHP has identified riparian and upland habitat near Sunlight Mountain Resort as a Potential Conservation Area.¹⁷

¹³ Noblis, *supra* note 6.

¹⁴ Sunlight Mountain Resort obtains its water for snowmaking from Fourmile Creek. See Clarke, S. et al., November 2008. State of the Roaring Fork Watershed Report, Ch. 4, Sec. 4, p. 7, http://www.roaringfork.org/pub/collaborative/4.4_LRF.pdf.

¹⁵ Macroinvertebrate Family Biotic Index data indicate the likely presence of substantial organic pollution in Fourmile Creek. See Roaring Fork Conservancy, *supra* note 3, at p. 15-16.

¹⁶ Individual metrics (EPT and Clinger Taxa) suggest slightly stressed conditions for aquatic life at the Bershenyi Ranch study site. See Roaring Fork Conservancy and Timberline Aquatics, Inc., *supra* note 8, at p. 53.

¹⁷ Colorado State University, Colorado Natural Heritage Program, 2008. Level 4 Potential Conservation Area (PCA) Report, Fourmile Creek at Sunlight, http://www.cnhp.colostate.edu/download/documents/pca/L4_PCA-Fourmile%20Creek%20at%20Sunlight_8-30-2012.pdf.

Oil and gas development could alter hydrology through increased consumptive use of water resources and changed routing of surface water through the road network. Current development has already destabilized slopes and altered channels, contributing to excessive sedimentation and threatening trout spawning.¹⁸ Fourmile Creek drainage, part of the Outlet Roaring Fork area, is ranked as having High Watershed Sensitivity and projected to be a focal area for proposed surface disturbance.

In addition to threatening water and soil resources, oil and gas development would aggravate existing fire and weed-prone conditions. Gambel oak shrublands dominate moister parts of the landscape and, under dry conditions, could spread fires quickly to neighboring residential and commercial areas. Weeds already impact seventy-one percent of Fourmile Creek's surveyed riparian and instream habitat, and further disturbance is likely to exacerbate this problem.¹⁹

Other Concerns

The DEIS cites to a 2004 EPA study suggesting a low probability of conflict between hydraulic fracturing activities and underground sources of drinking water (USDWs) in the Piceance Basin. However, this study also acknowledges that, "currently, test-drilling information is insufficient to determine if this is the case."²⁰ This uncertainty, coupled with preliminary EPA results linking hydraulic fracturing to groundwater contamination near Pavillion, WY, indicates that additional studies are needed to understand the impacts of hydraulic fracturing on groundwater resources at varying depths and to identify appropriate mitigation measures.²¹ Further, it underscores the importance of baseline and ongoing groundwater monitoring in areas with USDWs.

Recommendations

Roaring Fork Conservancy supports Alternative C with the recommended designation of the above three areas as unavailable for leasing. For lands open to leasing, we stress the importance of upholding – in full strength and scope – all NSO and CSU stipulations proposed under Alternative C, particularly those related to

¹⁸ For a discussion of land development impacts and threats to riparian and instream habitat on Fourmile Creek, see Clarke, S. et al., *supra* note 14, at Ch. 4, Sec. 4, p. 22-27.

¹⁹ *Id.* at Ch. 4, Sec. 4, p. 8.

²⁰ U.S. Environmental Protection Agency (EPA), June 2004. Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs Study, Attachment 3, Piceance Basin at A3-5 (cited in DEIS at p. 3-105).

²¹ U.S. EPA, December 2011. Draft Investigation of Ground Water Contamination near Pavillion, Wyoming, http://www.epa.gov/region8/superfund/wy/pavillion/EPA_ReportOnPavillion_Dec-8-2011.pdf.

surface water, groundwater, and aquatic and soil resources. Any waivers, exemptions, or modifications to these stipulations would severely impair current efforts to protect and restore natural resources vital to local ecological and economic communities.

To mitigate the impacts of oil and gas development, we request restrictions (or prohibitions, where possible) on road building on WRNF lands without NSO stipulations. When possible, pre-drilling assessments of baseline conditions should be conducted by an independent third party in order to effectively detect adverse development impacts. Surface water and groundwater resource monitoring will also be critical in all areas identified as susceptible to adverse impacts.

We strongly oppose Alternative A because it designates the greatest acreage as Administratively Available for Leasing and lacks critical NSO and CSU stipulations to protect water, soil, and aquatic resources. Likewise, Alternative B fails to provide adequate stipulations for critical watershed resources. While significantly stronger, we oppose Alternative D because it weakens NSO protections on roadless areas that buffer Colorado's watersheds and support its tourism and recreation-based economy.

Thank you for your efforts and consideration of these comments. Please contact me if you would like additional detail on any aspect of this letter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rick Lofaro, Jr.", written in a cursive style.

Rick Lofaro, Jr.
Executive Director