Impacts a/Sedimentation/rom Oil and Gas Development on Stream Macroinvertebrates in Two AdjacentWatersheds a/the Allegheny National Forest a/Northwestern Pennsylvania

Fritz, Kelley'*, Steven Harris', Harry Edenborn2, and James Sams2. 'Clarion University of Pennsylvania, Clarion, PA 16214, 2National Energy Technology Laboratory, U.S. Dept. Energy, Pittsburgh, PA 15236.

The Allegheny National Forest (ANF), located in northwestern Pennsy Ivania, is a multiuse forest combining commercial development with recreational and conservation activities. As such, portions of the ANF have been heavily logged and are now the subject of widespread oil and gas development. This rapid increase in oil and gas development has led to concerns about sediment runoff from the dirt and gravel roads associated with development and the potential impact on the aquatic biota of the receiving streams. We examined and compared the benthic macroinvertebrate communities in two adjacent watersheds of similar size and topography in the ANF; the Hedgehog Run watershed has no oil and gas development, while the adjacent Grunder Run watershed has extensive oil and gas development. In Hedgehog and Grunder Run, we collected monthly kicknet samples from riffles and glides at two sites from April to October 2010. At the same intervals, we measured standard water quality parameters, including conductivity and turbidity. Preliminary results have indicated much higher turbidity in Grunder Run, but little difference in the diversity and abundance of benthic macro invertebrates inhabiting the two streams.