Responses to Questions for the Record from John Stefanko, Deputy Secretary of the Office of Active and Abandoned Mine Operations within the Pennsylvania Department of Environmental Protection on behalf of the Interstate Mining Compact Commission (IMCC) Re. a Legislative Hearing on "Restoring Abandoned Mine Lands, Local Economies, and the Environment" before the House Subcommittee on Energy and Mineral Resources – March 18, 2021

Questions from Rep. Lowenthal for Mr. Stefanko:

1. **What has been the experience of the states in implementing the AMLER Pilot Program? What challenges have you faced?**

Perhaps the most important challenge is the position that programs like AMLER and RELCAIM put the states in. We are experts in abandoned mine reclamation work, not economic development. And while many of our traditional AML projects have economic revitalization components to them, that is not our main aim under Title IV of SMCRA. The other challenge is that we have very little control over the anticipated outcome of AMLER projects. We are often dependent on the partners with whom we work and their ability to either deliver matching funds or to see the project through to final completion and use. This is further complicated by the fact that some states simply do not have that availability of AMLER type projects within their jurisdiction. And finally, we are sometimes faced with the challenge of applying the AMLER money we receive within the time periods allotted for this work. One of the complicating factors here is the delays we face from OSM in 1) releasing annual funding following congressional appropriation; 2) issuing annual guidelines for AMLER; 3) requiring Environmental Assessments under the National Environmental Policy Act (NEPA), as opposed to categorical exclusions (as is the case with regular AML projects); and 4) vetting and approving projects. Each of these delays puts the states in a difficult position in expending AMLER money within applicable grant periods. Finally, the challenge of managing an AMLER program consumes time and resources that would otherwise be available for traditional AML reclamation.

2. **Do you believe the program is accomplishing the goals and objectives Congress set forth for the program?**

By and large, the answer is yes. As noted in reports from the Office of Surface Mining Reclamation and Enforcement regarding the first three years of the AMLER Pilot Program (https://www.osmre.gov/programs/AML/2016_2019_Annual_Report_AML_Economic_Development_Pilot_Program.pdf), a number of meaningful projects have been approved that, by all accounts, meet congressional intent for the program. The AMLER Pilot Program states can provide additional information if requested. Without more detailed input from Congress regarding our performance under the program, the states can only assume that since funding for the program continues, Congress must see value in maintaining it. As such, the states will continue to do their best to expend these moneys as intended by Congress with the input of stakeholders and appropriate oversight by OSMRE.

3. **How has your experience with the pilot program informed what we can anticipate under RECLAIM?**

The states have learned several valuable lessons and insights from their implementation of the pilot program via-a-vis RECLAIM. Perhaps the most important is that it can be quite challenging to identify projects that combine traditional AML work with economic development goals. Hence the importance of the waiver provision in RECLAIM. We have also learned that expending the funds that are authorized by the pilot program (and, by extension RECLAIM) requires a fair amount of time given the complexities associated with the nature of the projects. Hence the importance of extending the "reallocation penalty" under RECLAIM to the fifth year of the new program. Finally, for smaller programs, the implications of essentially running two separate AML programs (traditional and RECLAIM) will create additional staff and resource burdens and will likely add to administrative costs. While RECLAIM allows states to expend up to 10 percent of their RECLAIM funds on administration, this amount does not go as far with minimum program states.

Questions from Rep. Thompson for Mr. Stefanko:

1. **Can you describe some of the successes that we've seen in PA as a result of the Good Samaritan program? Do you believe that a similar program should be authorized in other AML states?**

Pennsylvania Environmental Good Samaritan Act (EGSA) Case Study Examples. For further information, see attached report.

Some representative examples (case studies) of successful EGSA projects completed in Pennsylvania include the Indian Creek Restoration Project located in Fayette County, PA, which is a project completed on private property; the Bennett Branch Restoration Project located in Clearfield and Elk Counties, PA, which is a project completed mostly on state-owned property; and the Fall Brook AMD Treatment System Project located in Tioga County, PA, which is a project completed entirely with private funding. These three projects were selected to highlight because they represent some of the diversity in the projects and entities undertaking the work and they geographically cover the state with one project located in southwestern PA, one in central PA, and one in northeast PA. A common theme illustrated by these examples and the numerous watershed restoration projects that have been implemented in Pennsylvania is that remarkable successes have been achieved in the absence of strict adherence to numeric water quality effluent criteria. EGSA has in many respects provided the flexibility to design cost effective restoration plans that have restored the intended uses of the targeted water resources.

Indian Creek Restoration Project, Fayette County, PA

Over the last twenty-two years, the PA-DEP, Bureau of Abandoned Mine Reclamation (BAMR) and the USDA Natural Resource Conservation Service (NRCS) worked with the Mountain Watershed Association (MWA) and several other partners to restore water quality and reclaim

abandoned mines in the Indian Creek Watershed in southwestern Pennsylvania. Indian Creek is a 125 square mile (324 square kilometers) watershed which is very sparsely populated (<10,000 residents) and contains significant publicly owned land (approximately 60% of the watershed). Indian Creek is a tributary to the Youghiogheny River, which flows into the Monongahela River, which flows into the Ohio River in downtown Pittsburgh.

The MWA completed a watershed assessment of the Indian Creek Watershed in 1998. The study revealed that mine drainage from abandoned surface and underground mines was the biggest source of impairment in the watershed and was degrading the quality and quantity of 17.4 miles (28 kilometers) of Indian Creek and its tributaries. Unregulated mining began in the watershed in the late 1800s and continued into the 1960s. One hundred and nineteen (119) mine drainage discharges were documented in the watershed. An analysis of those discharges revealed that the 10 most significant discharges in the watershed accounted for 94% of the total acid load, 90% of the iron load, and 94% of the aluminum load in the watershed. MWA worked with the NRCS to develop a Watershed Restoration Plan (completed in October 2000) to address the most severe discharges and restore water quality in the Indian Creek Watershed. Since that time, MWA, NRCS and PA-DEP-BAMR have constructed six passive mine drainage treatment systems to treat the worst discharges in the watershed.

Early in the project, it was clear that most of the treatment systems necessary to restore water quality in the watershed would need to be constructed on private property. The private landowners and the MWA were both extremely concerned about liability. The MWA along with each of the private landowners applied for and received approval for PA Good Samaritan protections for their involvement in the project. Without this protection, these projects never would have been undertaken or completed. As a result of remediation work undertaken, the stream has made a dramatic recovery and now supports a healthy fish and macroinvertebrate community. Once an eyesore and a liability to the local area, Indian Creek is now a community asset and a source of community pride. A walking trail was incorporated into one of the passive treatment system designs which ties to the Indian Creek Trail which will one day be a part of the Yough Trail Network.

Bennett Branch Restoration Project, Clearfield and Elk Counties, PA

Beginning in 2004, the PA-DEP, BAMR worked with multiple partners to restore water quality and reclaim abandoned mines in the Bennett Branch Sinnemahoning Creek Watershed in northcentral Pennsylvania. The Bennett Branch is a tributary to the Susquehanna River which flows to the Chesapeake Bay in Maryland. Over 70% of the land in the watershed is publicly owned in the form of state park land, state forest land, or state game lands. The primary water quality problems in the watershed were the result of uncontrolled and untreated discharges of AMD from AML that severely degraded the water quality in the lower 33 miles (53 kilometers) of the Bennett Branch and many of its tributaries, rendering those 33 miles (53 kilometers) of stream devoid of aquatic life.

The primary objective of the Bennett Branch Restoration Project was to develop and implement a detailed mine drainage abatement and abandoned mine reclamation plan. The goals of the plan were to restore water quality in the main stem of the Bennett Branch, improve water quality in

the AMD impacted tributaries, and maximize the reclamation of AML throughout the watershed. The plan included a combination of surface reclamation and both active and passive mine drainage treatment. Limestone reserves within the project area provided an opportunity to incorporate alkaline addition in the surface reclamation. Mineable reserves of Upper and Middle Kittanning Coal within the limestone extraction area provided an opportunity to partner with the mining industry in project implementation. The remining was conducted under a demonstration permit authorized under Project XL, an experimental permitting process cooperatively developed by EPA, OSM, and the PA DEP to both facilitate remining and highlight its benefits. The restoration work was also pursued in conjunction with the PA Wilds Initiative which advocates economic development and tourism throughout north-central Pennsylvania.

The project included reclamation of over 800 acres (324 hectares) of AML, much of which was restored to rangeland for PA's growing elk herd. Additionally, five passive mine drainage treatment systems and two tipping bucket lime dozers were constructed to treat abandoned mine discharges throughout the watershed. Work on the project was completed in 2012 with the Hollywood AMD Treatment Plant, which treats an average of 2,000 GPM (7,571 LPM) or 2.9 MGD (10.9 million LPD) of AMD, being the single biggest project. The Hollywood Plant treats 21 separate AMD discharges at a centralized location which originate from four separate abandoned underground coal mine complexes. The number and severity of the AMD discharges located within the watershed made a "total clean up" to federal CWA standards cost prohibitive. The level of treatment was designed to allow for the biological recovery of the Bennett Branch to support a sport fishery. The project costs for this public-private partnership, which approached $45 million, were split, with industry bearing approximately 15% of the total project cost, federal agencies providing approximately 10%, and state/local sources providing the remaining 75%. Water quality has been significantly improved to the point where, beginning in 2013, fish are now being stocked in the main stem of the Bennett Branch and fish have returned to the Dents Run tributary for the first time in roughly 100 years. In addition to restoration of the main stem of the Bennett Branch, the project allowed for the reconnection of numerous high-quality tributaries which facilitated that rapid biological recovery of the watershed. One of the project's primary partners, the Bennett Branch Watershed Association, applied for and received EGSA approval for several of the passive mine drainage treatment systems constructed as part of the overall watershed restoration effort.

Fall Brook AMD Treatment System Project, Tioga County, PA

As recently as 2015, the Tioga River from the confluence of the Fall Brook tributary did not support aquatic life. The devastation of the river's water quality is the direct result of AMD pollution. Some of the more heavily polluted tributaries have pH levels similar to battery acid. *The Watershed Assessment and Remediation Strategy for Abandoned Mine Drainage in the Upper Tioga River Watershed*, compiled by the Susquehanna River Basin Commission (SRBC), documented the AMD pollution and provided recommendations for corrective action. The Upper Tioga River Watershed, which encompasses 280 square miles (725 square kilometers) in northcentral Pennsylvania, is part of the Susquehanna River and Chesapeake Bay watersheds. The Tioga River begins as a small stream on Armenia Mountain in Bradford County. It flows southwesterly until it reaches the Blossburg area where it turns north, ultimately flowing into

New York State where it joins the Cohocton River to form the Chemung River. The Chemung River crosses back into Pennsylvania and joins the Susquehanna River near Sayre, PA.

From its confluence with the Fall Brook tributary to the US Army Corps of Engineer's Tioga/Hammond Dam Complex, the Tioga River is acidic with excessive concentrations of iron, manganese and aluminum with little to no aquatic life. The Fall Brook tributary was listed by the PA DEP as a regional watershed priority because of the severe impacts from AMD, and its location in the Susquehanna River Basin, which serves as a major water source for the Chesapeake Bay. Fall Brook is the first of four major tributaries contributing to AMD pollution in the Tioga River that has left approximately 13 miles (21 kilometers) of the river void of aquatic life. Treatment of the Fall Brook discharge resulted in approximately two miles (3.2 kilometers) of Fall Brook and three miles (4.8 kilometers) of the Tioga River being restored to a condition that can support stocked trout populations. It also reduces AMD pollution loads in the mainstem of the river all the way to the Tioga/Hammond Dam complex and lays the groundwork for future reclamation projects.

Summary: There is definitely value in expanding the opportunities for Good Samaritan projects and programs in other states, and many have expressed their interest in pursuing them. The key is developing clear statutory authority and requirements that states can rely upon when considering the adoption of these projects and programs. In the past, the limitations arising from the strict liability requirements in the Clean Water Act have dissuaded both states and potential Good Samaritan partners (generally watershed groups) from confidently pursuing these valuable opportunities to cleanup AML sites with polluted water.

Questions from Rep. DeGette for Mr. Stefanko:

1. ***A.*** **In 2012, Aspen Skiing Co. partnered with a coal plant in Somerset, Colorado to convert waste methane from a coal mine into usable electricity – reducing greenhouse gas emissions and generating financial return. Because this project has been so successful it will likely soon be replicated at other coal mines. While this isn't a comprehensive solution to climate change, it is a great example of what companies can do to help.**

   Is it common for coal AML sites to leak methane into the air similar to how abandoned oil and gas wells can leak methane?

The Commonwealth of Pennsylvania (PA) supports any opportunity to reduce greenhouse gas emissions and the landowners would certainly welcome the opportunity for the financial return. Methane leaks from AML sites that were mined prior to 1977, at least in PA, are rare and mostly related to underground mining. An example is abandoned portals that are reclaimed by backfilling to eliminate the health and safety issue related to access by the public. Due to the age of most AML sites, any methane has mostly dissipated over time. The extinguishment of mine fires at AML sites also eliminates the gases being emitted from burning piles and underground fires.

1. ***B.*** **What is the scope of the problem of methane emissions from abandoned coal mines?**

The true scope of the problem is not known. In Pennsylvania, there have been rare instances of gas migration in the basements of homes that were determined to be mine-related. These gas migration occurrences can be mitigated in various ways, such as venting via boreholes and grouting abandoned deep mines below the structure.

It should also be noted that Title IV of the Surface Mining and Reclamation Act of 1977 (SMCRA) prioritizes projects that will eliminate hazards to public safety over those whose impacts are limited to environmental harm. State Abandoned Mine Land (AML) programs focus primarily on the safety hazards abandoned coal mines pose to people, such as abandoned highwalls, coal refuse piles, landslides, subsidence of homes and dangerous mine openings. Because of our focus on hazards to human safety, AML programs have not studied the issue of methane emissions extensively.

1. ***C.*** **What kind of research is needed on methane emissions from abandoned coal mines?**

A study completed by EPA in 2004 entitled "Methane Emissions From Abandoned Coal Mines in the United States: Emission Inventory Methodology and 1990-2002 Emissions Estimates" can be found at the following link:https://www.epa.gov/sites/production/files/2016-03/documents/amm_final_report.pdf. It concluded that one of the next steps was to conduct research into additional sources for data on mines closing before 1972 to further refine estimates. It should be noted that AML sites that qualify for reclamation under the AML program are pre-1977.

1. ***D.*** **Have you considered trying to regulate methane emissions from abandoned coal mines?**

Pennsylvania has not considered regulating methane emissions from abandoned coal mines because there is no longer a mining company in existence to address the methane if being emitted from the abandoned mine.
It should also be noted that AML programs do not seal all abandoned underground mine openings. In some cases, AML programs instead construct gates at these openings. This is done to prevent human access while preserving the ability of endangered species such as bats to use the mine openings as habitat. This demonstrates that there may be some tension between the environmental goal of preventing methane emissions and other environmental goals the AML programs are attempting to achieve.

1. ***E.*** **In 2017, the Obama administration implemented, and the last Administration rescinded, a policy that encouraged voluntary capture of waste mine methane for productive use at coal mines on Federal lands. Typically, waste mine methane is vented into the atmosphere. Would reinstating something similar to the Obama era Waste Mine Methane Policy be helpful for incentivizing methane capture**?

I am not familiar with the policy. Pennsylvania does not have coal mines located on federal lands. The Commonwealth of Pennsylvania supports any opportunities to reduce greenhouse gas emissions.