

TOP STORY

Shamokin Creek restoration could yield critical minerals

By MACKENZIE WITT AND JOE SYLVESTER THE WEEKENDER

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The confluence of Coal Run, left, and Shamokin Creek in Shamokin is shown Friday. Restoration of the creek potentially could yield critical rare earth minerals.

LARRY DEKLINSKI/STAFF PHOTO

SHAMOKIN — Research into the acid mine drainage (AMD) in Shamokin Creek could yield more benefits beside cleaning up the waterway.

Members of the Shamokin Creek Restoration Alliance (SCRA) are hoping that research shows the presence of critical rare earth minerals (CREMs), elements used in cell phones, batteries and many electronics.

CREMs are defined as any of the 50 minerals critical to the U.S. economy or national security. Some of the minerals include the 15 lanthanide metals including scandium and yttrium, lithium, cobalt, nickel, platinum, aluminum and graphite. These minerals are used to create a wide range of technological devices, including wind turbines, computer hard drives, and laser and missile guidance.

“They are almost infinitely recyclable,” said Bette Conway, an environmental scientist with the U.S. Environmental Protection Agency (EPA). “We get them from other countries.”

According to a study conducted by the U.S. Geological Survey in 2018, 80% of all of the rare earth elements the country used throughout the duration of the year were sourced from China.

“The U.S. government doesn’t want to be reliant on other countries for this,” SCRA Director Steve Chrismer said.

So finding CREMs in Shamokin could provide economic benefits to the Coal Region.

“If acid mine drainage is valuable in this, what we can do is two-fold: We can clean up the environment of the Shamokin Creek and recover these valuable minerals,” Chrismer said.

He clarified, though, that these plans are not part of a “get rich quick scheme” and said that any revenue accrued through the project would “pay for itself.”

Beginning stages SCRA and the EPA, along with Penn State University, are in the beginning stages of finding solutions to improve the environmental integrity of Shamokin Creek and potentially recover CREMs in the area.

Chrismer said that, before any decisions are made, a substantial amount of information must be collected to determine the trajectory of the project and what the next, necessary steps are.

Conway said a study done about 24 years ago in the area showed the presence of CREMs, but it is not known if they are still present and to what extent.

A \$150,000 grant awarded through the EPA will kickstart research efforts in the area to evaluate parts of Pennsylvania’s solid coal waste piles, mine tailings and AMD, which may contain CREMs and other critical minerals.

“The grant was within our agency, from the Office of Research and Development,” Conway said. “I work in the Clean Water Permits section.”

She said the presence of the valuable minerals could offset the cost of the creek cleanup.

“It would make treatment less expensive,” Conway said. “A (treatment) plant is very expensive to maintain over time. This is a huge pool. Mining was done for over 200 years in this watershed.”

So it is not known how long treatment would take.

SCRA Vice President and Director Steve Motyka said the rare earth minerals can be sourced from AMD, sludge and ashes from refuse coal banks that are contaminating Shamokin Creek, which flows through 14 municipalities.

Motyka said that, by treating the creek water through this two-fold project, the creek would be healthier, which improves the environment and associated ecosystems.

The SCRA hopes to have sampling projects started by the end of the fall this year or early spring next year. If research is conducted in the fall, the results of the sampling effort would be available by January or February.

If active treatment sites are constructed at a few points throughout the Shamokin Creek's path, Motyka estimated that each site might cost approximately between \$20 million and \$50 million.

"I don't think there's ever been as big of an investment of \$50 million in one swoop," Motyka said. "If it comes to fruition, we might see the biggest investment in our valley."

Motyka believes that, through this project, the socioeconomic efforts put forth toward the area's revitalization would prove that the SCRA and all involved parties can make a difference.

"Revitalizing the creek can be the catalyst to promote economic change in Shamokin," he said, adding that the city has the potential to become clean and prosperous.

Although Chrimer is a fresh-faced SCRA director, he expressed his gratitude for the overnight success in the SCRA's long-time goals making significant progress.

"The SCRA has done hard, amazing work," he said.

The SCRA has more information about the project on its website at www.shamokin creek.org. Inquiries can be directed to the alliance via email at shamokin creek@gmail.com.

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