



HAGS/AEG – Meeting Announcement

Thursday, October 11, 2018 6:30 p.m.

Rare Earth Elements in Coal

Presented by: Tom Gray, P.E. - TetraTech

Abstract: Rare Earth Elements (REE) are important strategic and critical materials utilized in many high-technology applications including defense and renewable energy. Production of REE currently is dominated by China. Publicly available data from the USGS was used to determine that REE are present in many coal basins of the United States. Study results conclude that REE occurrences in coal and associated waste materials has the potential of being a domestic source of REE and could add a potential new revenue stream to existing coal mining operations. Mr. Gray will discuss findings to date and recommendations to make this opportunity a viable endeavor.

Speaker Bio: Mr. Gray received a Bachelor of Science Degree in Mining Engineering from the Pennsylvania State University in 1973 and a Master of Business Administration from the University of Pittsburgh in 1977.

He started his career at U.S. Steel's Frick Coal District in PA and later joined Dravo Engineers and Constructors, during which time he worked on the development of many coal mines, the Strategic Petroleum Reserve, the Waste Isolation Pilot Plant (WIPP) project, and the design and construction of a new steel mill in Canton, Ohio. Mr. Gray subsequently joined GAI Consultants in Monroeville, PA, spending 21 years working on numerous mining projects and serving as Branch Manager of the company's Charleston, WV operations. He was hired by Tetra Tech in 2007 and currently manages their mining practice in the eastern U.S. and is the corporate lead for mine closure and abandoned mine land reclamation.

Mr. Gray is a Professional Engineer in five states and has more than 40 years of professional experience with technical expertise in mining engineering, mine reclamation, coal ash disposal and utilization, watershed and ecosystem restoration, mine subsidence, mine-influenced water treatment, mine stabilization via grouting, and abandoned mine fire mitigation. He specializes in active and abandoned mining projects and in infrastructure projects that have mining-related concerns.

Mr. Gray is a Past Chairman of the Pittsburgh Section of the Society for Mining, Metallurgy & Exploration (SME) and is an SME Distinguished Member (2009) and Pittsburgh Section Distinguished Member (1997).

Rare Earth Elements																		He				
by Geology.com																						
H																	B	C	N	O	F	Ne
Li	Be															Al	Si	P	S	Cl	Ar	
Na	Mg																					
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr					
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe					
Cs	Ba	La-Ce	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn					
Fr	Ra	Ac-Lr	Rf	Db	Sg	Bh	Hs	Mt														
		Lanthanides																				
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu						
		Actinides																				
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr						



Illustration above from Geology.com

Meeting Location:

AEG Offices
441 Friendship Road
Harrisburg, PA
(not far from Bass Pro Shops)

Dinner at 4:45 – 6:15
Fiesta Mexico
3957 Paxton Street
(between Ruby Tuesday
and Nissan dealership)

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RSVP for dinner & meeting by no later than noon Tuesday, October 9, 2018.

RSVP Amy Randolph at secretaryhags@gmail.com or 717.395.3181.

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