

REE Characterization R&D



OBJECTIVES

Identify, locate, field sample, and analyze US domestic coal and coal byproduct solid and/or liquid materials to identify high REE concentrations.

NETL FUNDED FIVE PROJECTS FOCUSED ON:

- Sampling and characterization of pre-combustion coal-related materials to identify suitable material for recovery of REEs.

Characterized coal types: **Bituminous, Subbituminous, and Anthracite**

ACCOMPLISHMENTS

These projects furthered program goals by **determining the most viable sources of materials** to support future research and development and commercial REE production.

Analyzed samples and found REE concentrations exceeding 300 parts per million (ppm) from:

- Acid mine drainage precipitate and coal samples from **Northern and Central Appalachia coal basins**.
- Coal preparation plant refuse from **West Kentucky No. 13 bituminous coal in the Illinois Coal Basin** and rock samples from **Eastern PA anthracite coal seams**.

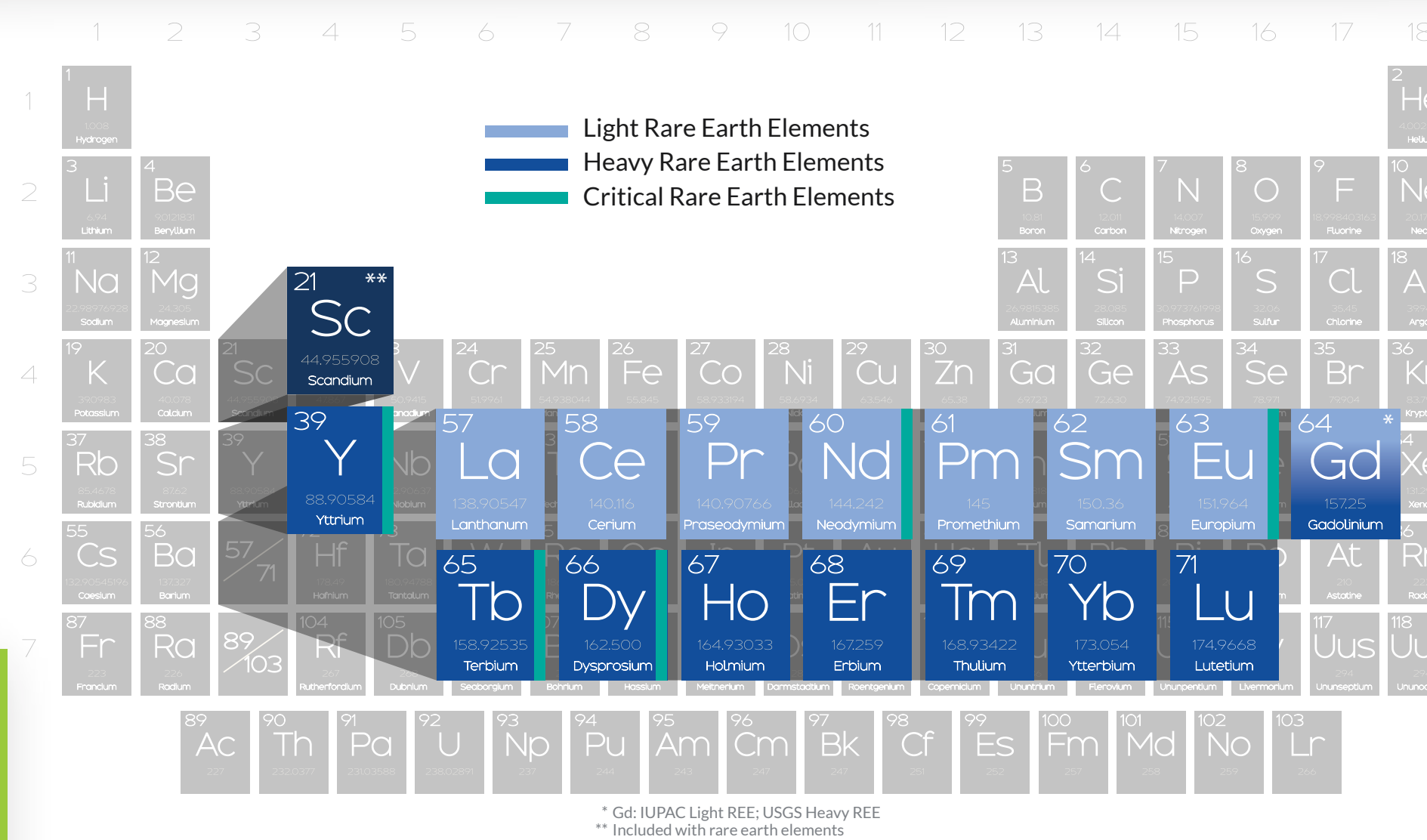
IMPORTANCE

DOMESTIC REE RECOVERY BENEFITS THE UNITED STATES

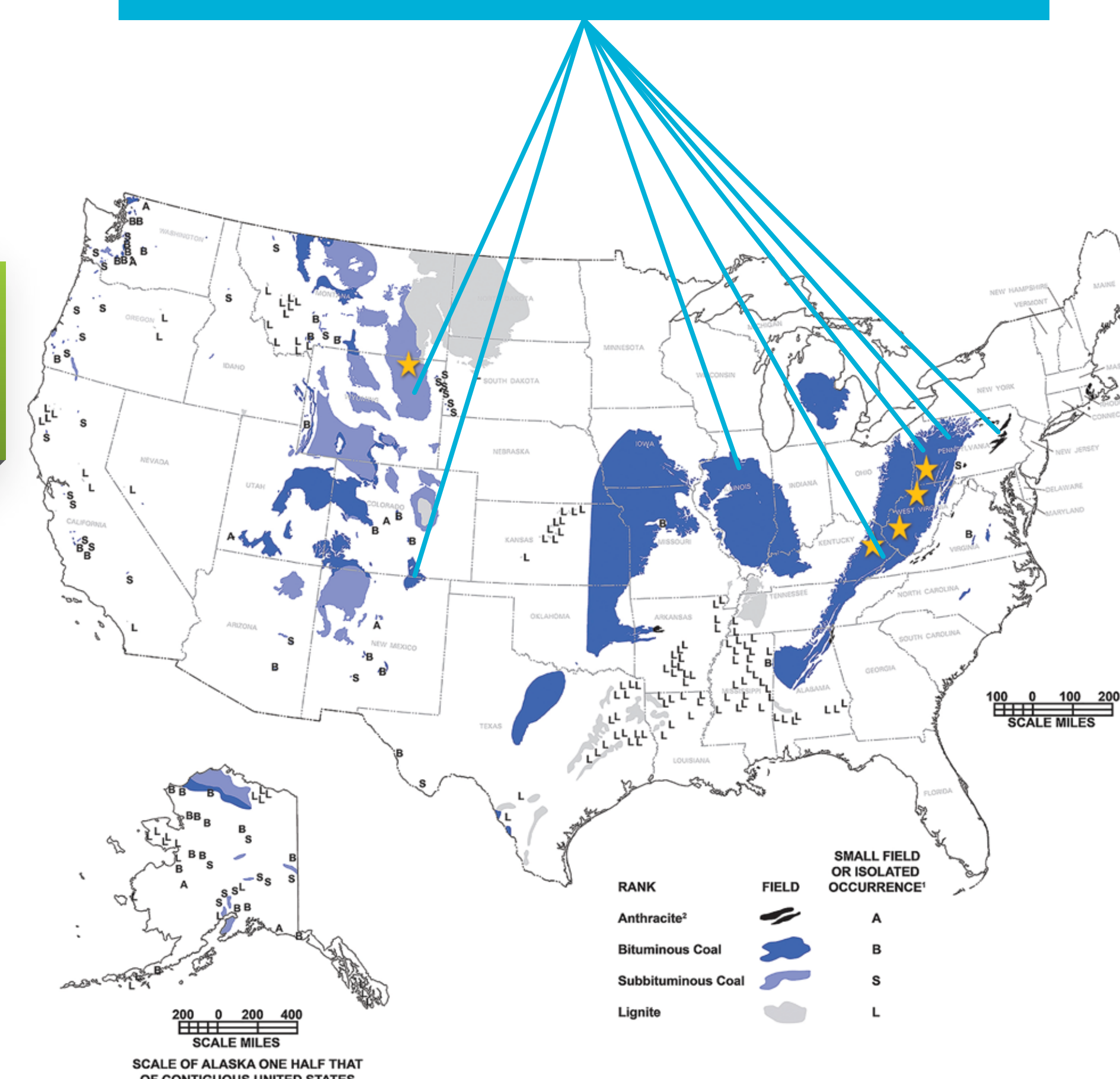
INCREASE NATIONAL SECURITY: Domestic REEs would lessen or eliminate dependence on foreign REE production.

INCREASE REVENUE FOR ENERGY SECTOR: Utilization of coal byproducts as a feedstock for REE recovery will provide additional revenue for the coal industry.

ECONOMIC GROWTH: Domestic REE recovery would allow the U.S. to export REEs to other countries and developing industries in places where coal has played an important economic role.

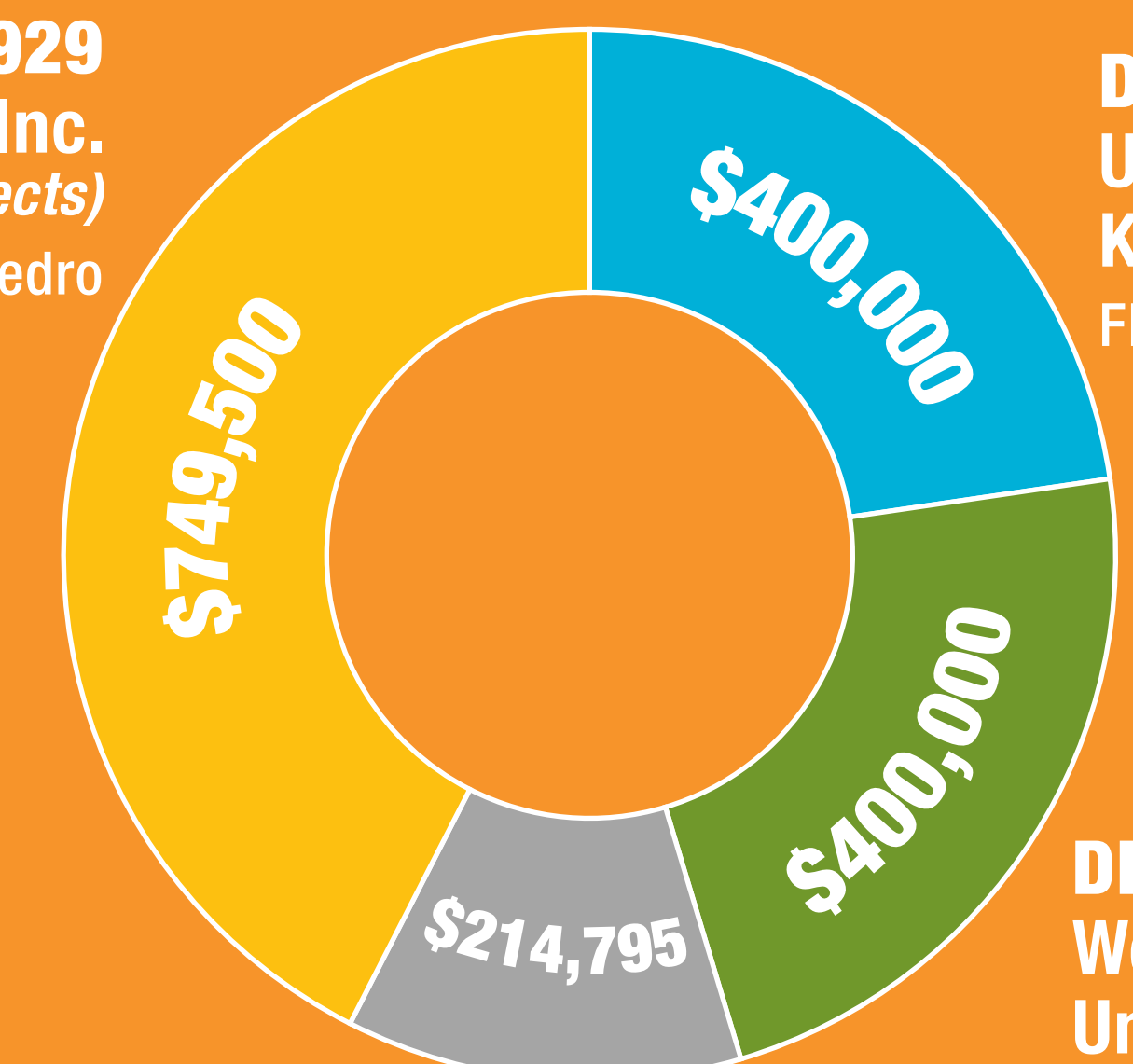


Coal basins found to date as having at least one sample with >300 ppm REEs:



PROJECT AWARD TOTALS

DE-FE0026648
DE-FE0026929
Tetra Tech, Inc.
(2 projects)
FPM – Vito Cedro

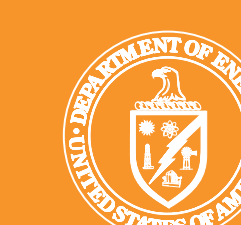


DE-FE0026443
University of Kentucky
FPM – Chuck Miller

DE-FE0026444
West Virginia University
FPM – Chuck Miller

DE-FE0026527
Xlight Corp.
FPM – Chuck Miller

Technology Manager – Mary Anne Alvin
Team Supervisor – Patricia Rawls



U.S. DEPARTMENT OF
ENERGY

