C_MC_SC_FC_B

Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin

DOE 10-Minute Presentation



Summary

- This project integrates 5 states and 1 Indian nation into *one team*
- We are testing multiple hypotheses of CM enrichment by new geological modeling and sampling (including geochemical well logging)
- We will also assess the industrial, regulatory, and public readiness for CM activities in the basin
- We have a Technical Advisory Committee and are building a Tribal Advisory Committee



Vision

- Our vision is to accurately assess the critical mineral potential of raw and waste resources as well as the human, industrial, and regulatory infrastructure within the Cherokee-Forest City Basin to assess its readiness for CM development
- Our core values are safety, integrity, and diversity



Where

- What Region is your Team operating in?
 - "The Midcontinent"...SW IA to NE OK
- Are there specific project/ target/ asset/ reserve locations?
 - Strippable coals exist across the basin
- Where is your Technology Innovation Center(s) planned to be located?
 - Lawrence, Kansas at KU Innovation Park
 - Close to center of basin
 - Near KC Fed, DOE KC National Security Campus, USDA Center
 - Near largest population center and largest airport in basin



What

- What are the three key pieces of your CORE-CM Program?
 - Stratigraphic and Structural Modeling
 - Geochemical Assaying
 - Planning
- What are your main objectives or goals?
 - Test multiple hypotheses about CM enrichment
 - Build a modern 3D stratigraphic and structural model of the basin populated with critical mineral resource abundances
 - Accurately assess the human, industrial, and governmental resources in the basin for CM development
 - Interact positively with stakeholders
- What is the vision for your Technology Innovation Center(s)?
 - **Our TIC's vision is** that it will serve our basin's industry, governments, and people with high quality scientific knowledge and engineering technologies to support critical mineral industries in the basin





Who

- Who are the members of your team?
- Who are your stakeholders?
- Who do you plan to reach out to that isn't currently on your radar?

Indian Nations in basin, but not in this project

- Kickapoo Reservation/Sac and Fox Nation Trust Land joint-use area (KS)
- Prairie Band of Potawatomi Nation Reservation (Kansas)
- Sac and Fox Nation Reservation (Kansas, Nebraska)
- Omaha Reservation (Iowa, Nebraska)
- Ponca Land Trust (Iowa, Nebraska)
- Winnebago Reservation (Iowa, Nebraska)
- Iowa Reservation (Kansas, Nebraska)
- Oklahoma Tribal Statistical Areas
 →First nations advisory council





Technical Advisory Board

- Scott Honan, NioCorp
- Clay Hartley, Phoenix Coal Company
- Rory Martin, Martin Marietta
- Bob Dawson, Iowa Dept of Transportation
- Kyle Halverson, Kansas Dept of Transportation
- Erik Blume, KU Innovation Park
- Phil Heckel, PhD, Emeritus, Univ Iowa
- Dave Newell, PhD, Emeritus, KGS





COAL COMPANY, IN

Martin

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Why

- Why do you feel your CORE-CM project is important to your Region?
 - It will revitalize our basin's coal industry and add additional natural resources that both can support basin-specific industries
- What are the benefits to your Region if your project is successful?
 - Provide raw materials for basin-specific industries like wind power, aviation, and heavy manufacturing



Catherine Evans/KGS

How

- How do you plan to engage your stakeholders?
 - Advisory boards and meetings
- How do you plan to address the integration of Environmental Justice, Environmental Social Governance, and/or Standards development within your project?
 - Task experienced project personnel with EJ/ESG assessment
 - Review outcomes with advisory boards and regulators
- How has the initiation of your project gone so far?
 - It has gone well



KS Rep. (Now KS Gov.) Laura Kelly at KGS Field Conference inspecting core from DOE-Funded CO₂ pilot injection project

Challenges and Opportunities

What do you see as the challenges and opportunities for your project?

- Challenges
 - Integration of data from many jurisdictions
 - Getting geochemical well logs in a timely fashion
 - Timely analysis of sample chemistry
- Opportunities
 - Build a team for future project phases
 - Educate industry, regulators, legislators and public now so they are ready in the future for CM activities



Interpretation of weight fractions determines mineralogy and matrix properties

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