

NOTES FROM BREAKOUT SESSIONS – April 8, 2010

BREAKOUT SESSION 1 – ENERGY RESOURCES

Facilitator: W. Lassetter

In his inaugural address on January 16, 2010, Governor Robert McDonnell stated his commitment to *“make Virginia the ‘Energy Capital of the East Coast’. By growing the natural gas and coal industries, expanding the use of nuclear power, and promoting new energy technologies like wind, solar and biomass”*. The governor also stated his intent to *“champion environmentally-safe offshore energy exploration and production, bringing with it thousands of new jobs, hundreds of millions in new state revenue and billions in new investment”*.

This positive directive for expanding Virginia’s energy resources served as a central theme for the breakout session. Participants engaged in an open discussion of issues and opportunities related to major energy sources. Following is an outline of those discussions:

Marcellus Shale gas play:

- There is a need for coordinated data sharing between the Federal and State government agencies that conduct resource assessments and industry engaged in exploration and development of this newly-identified gas resource.
- New environmentally-safe technologies used in exploration and development of deep gas reservoirs, such as horizontal drilling and hydro-fracturing methods, need to be better explained and communicated to the general public.
- Water-related issues will continue to be a major concern. Industry is very active in assessing solutions for reprocessing drilling and production waters. Development of environmentally-safe frac fluids and additives is an important issue of concern.

Off-shore oil and gas:

- An enormous amount of misinformation is currently out there regarding estimates of oil and gas on the OCS. Need some clarity and coordination in providing realistic estimates and projections.
- Link between the science (assessments) and development of policy should be transparent and innovative. How can revenues from offshore resources (if any) best serve the further development of sustainable energy resources (like near-shore wind).

Coal:

- New EPA rules and guidelines concerning TDS monitoring in coal mining watersheds are likely to have an enormous impact on the future of coal production. This is a major concern for the industry.
- New EPA rules on the re-classification of coal ash as a hazardous waste will significantly affect the power producing industries, as well as the re-use industries (e.g. construction materials that currently use coal ash).
- There is concern about dwindling coal reserves in VA.

Nuclear:

- Public perception of nuclear power industries has improved. Concerns for mining domestic uranium (esp in VA) may not have changed as much.
- Major hurdles for advancing nuclear power development remain the enormous capital costs for power plant construction, costs of insurance, continuation of federal support and financial incentives, and lengthy permitting process that results in a significant time lag to going online.
- There is a strong need for improved educational outreach.
- Discussions of U content in other possible sources in VA (phosphorites, sea water, etc).

Other:

- New regulations being considered on coalbed methane (CBM) monitoring underground will impact the coal mining industry. There is a continuing concern regarding CBM well drilling and development and safety of underground mining operations.
- There remains much interest in carbon sequestration studies. Discussed the DOE (SECARB –unminable coal beds) and USGS (geologic storage) programs.
- Brief discussions of current and future studies of geothermal resources in VA: where, when, and who. Residential systems have advanced a lot in recent years, but commercial-scale geothermal potential in VA remains poorly understood.

BREAKOUT SESSION 2 – SURFICIAL GEOLOGY**Facilitator: Matt Heller**

This breakout session was attended by a diverse group of geologists and soil scientists working as private consultants and for state universities and public agencies including the Virginia Department of Transportation and the Virginia Department of Environmental Quality. Discussion initiated on the stated topic of surficial geology, but developed into a broader discussion related to geologic information needs in Virginia. Following is an outline of the discussion:

Problems and Opportunities Relating to Surficial Geology

- Lack of LIDAR coverage in Virginia.
- Soil and geologic data for Virginia is in different places and/or not easily accessible.
- Engineering data are not available for counties with older soil surveys.
- Debris flows and alluvium are not differentiated on most maps.
- Rare and endangered soils, particularly wetland soils, need to be better identified.
- There is an opportunity for Geologists and Soil Scientists to collaborate with botanists and ecologists for “Natural Heritage” projects.
- There is potential for share geologic/water information among state agencies including VDOT, DEQ, and VDH.

- NRCS accepts privately collected data. Is there an opportunity to collect geologic data from geologists and soil scientists working in Virginia?

Geologic Information in Virginia should be:

- Georeferenced
- Compatible with GIS/Google Earth
- Available through the internet
- Include good lithologic descriptions
- Identify areas of higher potential ground water yields (areas of “broken rock”)

The last part of the meeting included a discussion about seeking funding to consolidate geologic data for Virginia into one place and make it available via the internet. It was generally agreed that the geologic survey or equivalent was a logical host of this type of information. Several in attendance indicated a willingness to attend a future meeting on this topic and to assist in applying for funding opportunities.

BREAKOUT SESSION 3 – GEOSCIENCE EDUCATION AND OUTREACH

Facilitator: Amy Gilmer

How do we improve public awareness and knowledge of the earth sciences?

Arenas of awareness:

1. Education community
2. General public awareness

Audiences we need to reach:

1. Students
2. Teachers
3. Environmental groups
4. Planners
5. Media
6. Legislators
7. Civic groups
8. Master Naturalists
9. Local governments

Ways in which the geosciences community can reach our audiences:

1. Op-ed. Articles
2. Speakers list – a list of people willing to speak to groups on geosciences topics
3. “Expert” points of contact list – a web list of people that can be contacted by the media about specific geosciences topics. This list could be disseminated to the media as a proactive approach.
4. Web connections – compiled list of geology web sites pertaining to Virginia (e.g. JMU site and W&M site).

5. Virtual field trips
6. Place the Geology of Virginia (DGMR/Radford project) cds/teacher workbooks online
7. Summer geology camp for students – JMU and USGS joint venture
8. Regular communication with science coordinators/educators in each county
9. Earth science educators mailing list/list serve
10. Articles in the Virginia Science teachers' newsletter
11. Workshops/Field trips at the VAST conference.
12. Episode on geoscience topics on Virginia Currents (PBS)
13. Connecting with localities through mapping projects – talking with local governments before and after a project.
14. Connecting with local engineering groups, water supply planning and solid waste management groups.
15. Broadening into other green issues; connecting to larger scale issues
16. Record talks at the symposium

Potential Partnering opportunities

1. The group suggested that DGMR could become a “clearinghouse” of information and could act as a connector between various groups.
2. Content teaching academy
3. Partnering with industry to support education programs
4. Partnering with the Dept. of Education and the Math and Science Center to apply for grants
5. STEM
6. JMU's version of STEM