Hydraulic fracturing and unconventional oil and gas extraction in South Africa

The Free State Branch held their last branch event for 2014 on 28 October. Ms Surina Esterhuyse from the Centre for Environmental Management, University of the Free State presented on the highly controversial subject of oil and gas abstraction in South Africa. She explained the difference between conventional and unconventional extraction, and emphasised on the positive and negative implications both may have on South Africa.

Noteworthy facts that were provided during her presentation include:

- Various applications for unconventional gas (shale gas and coalbed methane) mining by means of hydraulic fracturing (fracking) were submitted to DMR and PASA during 2010 and 2011.
- Applications for unconventional gas currently cover approximately 40% of the surface area of South Africa.
- Exploration for unconventional oil and gas (UOG) without hydraulic fracturing is currently allowed in South Africa.
- Any unconventional oil and gas extraction method has an impact on the environment, not just fracking.
- Impacts on biophysical and socio-economic environments interlink, thus the governance of the mining activities should be handled as a whole and linkages should be researched, understood and managed in an integrated way.
- The importance of the indirect impacts and not just the impacts of the fracking process should be noted (e.g. building of roads, increase in traffic etc.).
- The impacts on regional and cumulative scale should be investigated.
- Many uncertainties and knowledge gaps still exist and the precautionary principle should apply.

It was concluded that it is vital for the industry and government to recognise the complexity of all the challenges posed by UOG extraction by means of the following:

- Effective adaptive and transparent regulatory system.
- Best monitoring practice.
- Oil and gas companies' transparency and cooperation.

Surina Esterhuyse is a researcher at the Centre for Environmental Management, University of the Free State. Her previous work experience includes managing the groundwater aspects of the Upper Orange and Middle Vaal Water Management Areas at the South African Department of Water Affairs, consulting various industries in South Africa on organic pollution assessments and developing regional mine closure strategies for the Witwatersrand gold mining areas for the Department of Minerals and Energy at the Council for Geoscience, South Africa. Recently she has been involved in research related to unconventional oil and gas extraction. She has a M.Sc. in Geohydrology from the Institute for Groundwater studies, University of the Free State, South Africa.