Place marker for a rule set regarding disposal

Possible title: Disposal of Flowback and Produced Water

Possible description in place marker: This section will detail the permissible alternatives for the safe disposal of flowback and produced waters. Due to expected high salinities and the likelihood of polluting chemicals in these waters, surface discharge will not be permitted. DENR has ongoing studies of all considerations involved with the various options, including the technical feasibility and relative economics.

The notes below are a guide to Committee and staff regarding possible content of the section, and not language suggested for the current rule set.

Elements of Section

- The current options used in other states are:
    - re-use for the same purpose with or without some level of treatment
    - Disposal in UIC Class II wells including transport thereto
    - Send to municipal water treatment facilities for surface discharge or use
    - Send to purpose built treatment facilities for surface discharge or use
- The re-use option
    - Most favored option
    - Recent technology advances make this option more feasible
    - Particularly suited to NC because we expect low salinity in waste water
    - DENR economic analysis favors over other options
- UIC Class II well option
    - Not available in the Triassic basin
    - Closest likelihood is in Coastal Plain, most likely only near the coast
    - Transport related issues including road damage and spill potential
    - Distance ought to make this economically disadvantaged
    - Need staff to study the pros and cons of this option
    - Brines are being desalinated in coastal communities for fresh water; these bodies would not be good hosts for disposal. Disposal could only be in very deep zones, of the type considered for CO2 sequestration (needs verification)
    - Measures to avoid seismic activity that could occur in such wells
- Post re-use disposal
    - Re-use will end at some point when there are no more wells
    - Laws may be needed to allow waste water transfer to other operators (check TX)
    - Post re-use fate again reverts to UIC Class II or treat to discharge or other use
    - Municipal treatment facilities not suited to handle these salinities (check)
    - Purpose built facilities could be needed. Alternative would be treatment on site perhaps in portable treatment facilities.

    - Treatment ought to be fit-for-purpose, not one size fits all. Most likely purposes are agriculture, surface discharge and potable water, likely in ascending order of cost to process.
- Rulemaking considerations
    - Could we *require* the re-use option with a provision for variances when not feasible?
    - What would be the basis for such a restrictive rule?
    - Alternatively what would the language be to make re-use all but a *fait accompli?* Strict requirements on the UIC Class II option perhaps, such as requiring 3D seismic mapping for proximal active faults?
    - Could we present re-use and deep disposal as the *only* options?
    - Remember the re-use option carries with it implicit requirement for treatment or deep disposal at some juncture.

VR May 29, 2013