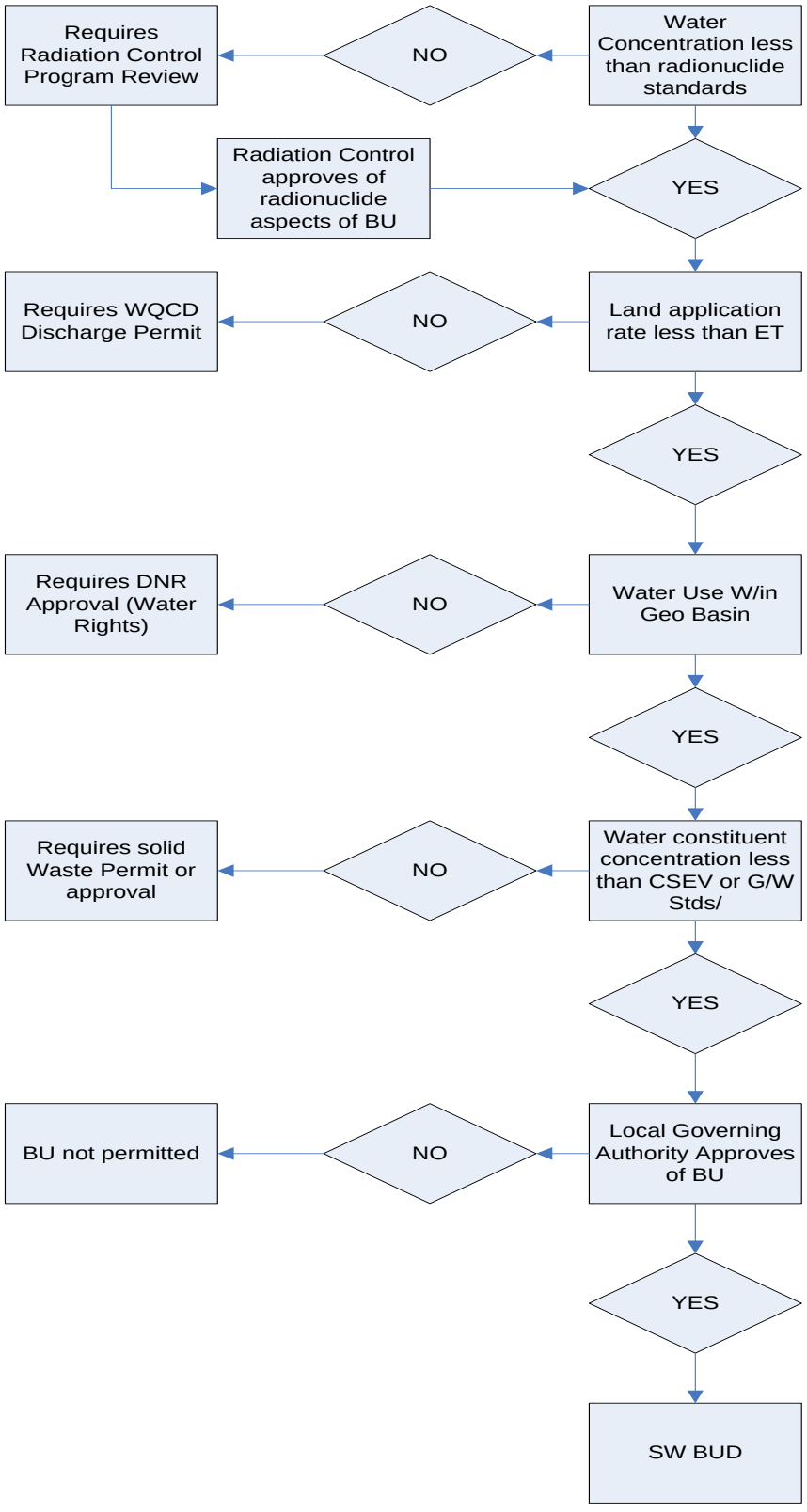
Beneficial Use of Produced Water for Dust Suppression



Beneficial Use of E&P Water for Dust Suppression Key Questions:

1. Will the water be used for dust suppression?
    a. If yes, will it comply with the State Engineer's Office Beneficial use requirements?
    b. What are the specific requirements, including, but not limited to;
        i. Use within geologic basin;
        ii. Ownership;
        iii. Stakeholders to list others
    c. If no, the use is not part of this specific guidance effort.

2. Does the produced water meet the Radionuclide standards for beneficial use?
    a. What are the standards for beneficial use as a dust suppressant?
    b. How does a potential user apply to the Radiation Program for review?

3. Is the beneficial use of produced water an approvable practice under the local government codes and regulations?
    a. If so, see the requirements for state regulations below.

4. Will the water be sent from a centralized facility, commercial facility or directly from the drill pad for use as a dust suppressant?
    a. If Centralized or directly from drill pad, then COGCC has regulatory authority
    b. If Commercial, then the HMWMD has regulatory authority
    c. If the water is sent to a commercial facility, a beneficial use determination is required prior to beneficial use.
    d. What are the regulatory requirements for beneficial use approval with the COGCC for produced water to be use as a dust suppressant?

5. Will the application occur at greater or less than the evapotranspiration rate?
    a. What is the ET rate for the area of application?
    b. How is application rate correlated to the ET rate?
    c. If the application rate is greater than the ET rate, then a discharge permit with the Water Quality Control Division at CDPHE is required.
    d. If the application rate is less than the ET rate, then approval from COGCC or the Solid Waste Program based upon Question #4 above.

6. If the water is treated or stored at a commercial facility prior to beneficial use, are the following requirements met?
    a. Does the water contain constituents at or below the Water Quality standards on the CSEV's? or
    b. Does the water contain constituents at or below naturally occurring background levels?
    c. Does the water contain constituents at or below those in non-produced water dust suppressants on the market?
    d. Have disposal options for residuals been explored (TENORM disposal considered)?

7. Does the application require a stormwater permit with the WQCD?
    a. When is a stormwater permit needed?
    b. What standards must be met to satisfy the stormwater permit?
    c. What type of stormwater permit is necessary?

8. Does the use require an Air Pollution Emission Notice (APEN) with the Air Pollution Control Division?
    a. Under what circumstances would an APEN be required?