

WATER MANAGEMENT PLAN

OPERATOR: Merit Energy Company (Merit)
Brown Cow Pod
Carbon County, Wyoming

The Brown Cow Pod is 1 of 9 pods that comprise the Atlantic Rim Coalbed Methane Interim Drilling Project. The Brown Cow Pod consists of 24 gas wells and related water disposal wells. This Water Management Plan will address all of the planned interim development wells located in T14N,R90W Sections 1, 2, 12, 13, 23, and 24, and T14N, R91W, Sections 18 and 19. Water injection wells will be used to dispose of water produced during testing and production of methane gas.

Before the injection wells are drilled and completed, water produced from CBM wells may be transported to nearby drilling locations and used to drill additional wells. Any produced water will be contained in the drilling reserve pit constructed on each well pad until the injection wells are completed. Once all wells have been drilled, water produced at the exploratory well sites would be gathered and transported to the injection wells for disposal, which would be permitted by all necessary agencies.

See attached diagrams of [typical injection well](#) and [water transfer facility](#).

The injection well will be drilled, cased, cemented to surface and the Cherokee and/or Deep Creek sands will be tested to determine their suitability for water disposal. The estimated depths of these formations are 3200 ft. and 3400 ft. respectively.

Typically, a single injection well would be used for several gas wells. The number of producing gas wells per injection well will depend on the suitability of the Cherokee and Deep Creek sands and the amount of produced water from each gas well.

The source of the water to be disposed will be from the coal formations of the Mesaverde Group. Water will be transported from each gas well to the injection well by buried 2" poly pipe. Transfer pumping stations may need to be utilized in areas where elevation differences require supplemental pumping to transfer the produced water. A typical water transfer facility consists of a 400 bbl water tank with associated pump and piping.

To keep surface damage to a minimum, ditches will combine as many pipelines as possible (i.e. water, electricity, gas).

A typical water injection facility will consist of four 400 bbl water tanks, pump house, piping, and well house for the disposal well.

Both the Cherokee and Deep Creek formations are isolated above and below by competent shale barriers. These shales will prevent the initiation and propagation of fractures through overlying strata to any fresh water zones.