Cumulative Impacts

Groundwater

The applicant has shown in map view in Exhibit 2-1 (Uranerz, 2009), CBM Infrastructure at Nichols Ranch, the projected wellfield for CBM intersects with the estimated ore zone of the A Sand. Some wells for the CBM potentially can pass through the ore zone in the A Sand to the target depths for the methane. These wells, if improperly grouted in the A1 and BA aquitards to confine the ore-bearing A Sand, could potentially provide a path for vertical excursions into aquifers above and below the mined horizon. Multi-well pump tests can be used to show level of confinement in the vicinity of the CBM wells.

The release of large amounts of CBM water on the surface in the vicinity of the ISR has the potential to affect water quality of surface water and groundwater of the surficial aquifer(s). Accidental spills from the ISR when coupled with the increased infiltration caused by CBM water could reduce the effectiveness of the vadose zone to attenuate contaminant transport to the surficial aquifer. The timing of a CBM release relative to the ISR mine lifetime is uncertain. Releases prior to mine operations would have less effect than those during or shortly after operations. The location of the projected CBM well field on the southern end of the ISR permitted property is coincident with the shallower depths to water. Consequently the cumulative impact to the surficial aquifer is considered moderate.

The applicant has shown in Exhibit 2-2 the CBM Infrastructure at the Hank Unit. CBM wells exist within the ½ mile Adjacent Boundary. Furthermore, many CBM wells are proposed, some intersecting the proposed ore body in the F Sand. The cumulative impacts for CBM wells at the Hank Unit are expected to be similar to those at Nichols Ranch. The applicant has stated in a response to an RAI that the CBM operator at Hank Unit will not discharge any CBM water in the near future in the license area, but, instead, is pumping it off site for reinjection into the Madison formation some 35 miles away. The uncertainty that the situation will continue leads to decision that cumulative impacts from the ISR and CBM operations to the surface waters and the groundwater in the surficial aquifer are considered moderate.