

3.4.2 Wellfield Areas

Wellfields are designated areas above the ore zone that are sized to reach the desired production goals. The ore zone is the geological sandstone unit where the leaching solutions are injected and recovered in an in situ recovery wellfield and it is bounded between impermeable aquitards. Production areas are the individual areas that will be mined in the wellfield. The injection and recovery wells are completed in the ore zone intervals of the production sand. Horizontal monitor wells are located in a ring around the wellfields. Vertical monitor wells for overlaying and underlying aquifers are installed accordingly for one monitor well for every 4 acres of wellfield area. The distance between the monitor wells in the same aquifer shall not exceed 1,000 ft, and all monitor wells are installed within the production area unit. The final locations of the horizontal and vertical monitor wells will be submitted in the Production Area Pump Test Document as described in Section 5.7.8. This is because the actual locations might need to be changed because of topography, access, etc. The screened intervals for the excursion monitor wells are across the entire production zone.

3.4.3 Wellfield Injection and Recovery Patterns

The patterns for the injection and recovery wells follow the conventional 5-spot pattern. Depending on the ore zone shape, 7-spot or line drive patterns may be used. A typical 5-spot pattern is shown in Figure 3-9 (see map pocket) and contains 4 injection wells and 1 recovery well. The dimensions of the pattern vary depending on the ore zone, but the injection wells will likely be between 50 and 150 ft apart. In order to effectively recover the uranium and also to complete the groundwater restoration, the wells will be completed so that they can be used as either injection or recovery wells. The leaching solution will be injected into the injection wells, and the solution will be recovered through the recovery wells. To create a cone of depression in the wellfield, a greater volume of water is recovered than injected. The excess water or wellfield