RAS 9744

DRAFT REPORT OF PRELIMINARY SUBSURFACE EXPLORATION

PROPOSED NATIONAL ENRICHMENT FACILITY LEA COUNTY, NEW MEXICO

Prepared for:

LOCKWOOD GREENE

Spartanburg, South Carolina

Prepared By:

MACTEC ENGINEERING AND CONSULTING, INC.

Knoxville, Tennessee

MACTEC Project 3043031049/0001

October 8, 2003

LES-00727

Template = SECY-027

4.4.3 Seismicity

Current research indicates that the Rio Grande Rift and the adjacent Basin and Range tectonic province are seismically active and the Permian Basin (in which the site is located) is considered to be seismically quiet or inactive. As previously indicated, the overwhelming majority of active faults in New Mexico are located within the boundaries of the Rio Grande Rift. The majority of seismic activity reported in New Mexico for the period 1869 to 1998 is concentrated along the rift (Sanford, Lin, Tsai, and Jaksha, 2002). However, even though the Permian Basin is considered seismically inactive, there is a documented cluster of seismic activity in the Central Basin Platform area since the mid-1960s (U. S. Department of Energy, 2003). In this area, the spatial distribution of epicenters correlate with known locations of oil and natural gas fields and is believed to be induced by production, secondary recovery, or waste injection activities within this natural gas and petroleum province, rather than seismic sources (Sanford, Lin, Tsai, and Jaksha, 2002; U. S. Department of Energy, 2003).

5.0 SUBSURFACE CONDITIONS

Subsurface conditions were explored with five widely spaced borings drilled in general accordance with the procedures presented in Appendix A. The boring locations were selected by Lockwood Greene and boring depths were selected by MACTEC. The borings locations and elevations shown on the Boring Location Plan (Figure 2) and the Soil Test Boring Records were surveyed by others prior to the field exploration.

Subsurface conditions encountered at the boring locations are shown on the Soil Test Boring Records in Appendix B. These Soil Test Boring Records represent our interpretation of the subsurface conditions, based on the field logs and visual examination of the field samples by one of our engineers. The lines designating the interfaces between various strata on the Soil Test Boring Records represent the approximate interface locations.

The soil test borings drilled at this site typically encountered Quaternary age eolian and alluvial silty sands underlain by Triassic age clays. A discussion of the origin of these materials is presented in Section 4.0 of this report.