4.0 PROPERTY IDENTIFICATION

4.1 PHYSICAL CHARACTERISTICS

4.1.1 NAME - Fort McClellan

4.1.2 LOCATION - Anniston, Alabama

4.1.3 TOPOGRAPHY - Not included as part of the scope of this Radiological Historical Assessment (see Fort McClellan Environmental Baseline Survey, dated January 1998).

4.1.4 STRATIGRAPHY - Not included as part of the scope of this Radiological Historical Assessment (see Fort McClellan Environmental Baseline Survey, dated January 1998).

4.2 ENVIRONMENTAL SETTING

4.2.1 GEOLOGY

Fort McClellan is located in the Tennessee section of the Appalachian Valley and Ridge province. Consolidated rocks that range in age from Precambrian to Pennsylvanian have been sharply folded into northeastward trending synclines and anticlines complicated by thrust faults that have a general northeastward trending strike and a southeasterly dip. The predominating features of the area are the thrust faults.

Metamorphic rocks have been thrust northwestward and overlie rocks of Cambrian and Ordovician age along the eastern edge of the county. Throughout the rest of the county, the presence of faults is indicated by repetition of formations and by the absence of formations. Secondary stresses resulting from the primary folding and thrust faulting, caused numerous high-angle faults that are of more local extent. Additionally, the faulting and the attendant folding and crushing of beds caused the distribution of formations near the town of Choccolocco (Causey and Warman 1962).

4.2.2 HYDROGEOLOGY

Not applicable in this report (see Fort McClellan Environmental Baseline Survey, dated January 1998).

4.2.3 HYDROLOGY

4.2.3.1 GROUNDWATER

Movement of groundwater is to the northwest toward the town of Weaver (U.S. Geological Survey Water Resources Investigation Report 88-4133 1989).

The fault zones of the area form reservoirs and conduits for large quantities of groundwater. Abundant supplies are available over much of the area from the many springs that discharge groundwater from the fault systems. Several hundred gallons per minute commonly can be developed from drilled wells that are finished in the Shady Dolomite and the Conasauga Formation. These formations are relatively thick and crop out in large parts of the area. Locally, the Cambrian and Ordovician dolomites supply several hundred gallons per minute of groundwater from springs, while drilled wells in these rocks produce much smaller yields. Additionally, the Fort Payne Chert and the Newala Limestone in places furnish supplies of several hundred gallons per minute, but these formations are relatively small and scarce in this area.

4.2.3.2 SURFACE WATER

Runoff from the main cantonment area flows into Cane Creek, which empties into the Coosa River. Water from the west slope of Bains Gap flows into Choccolocco Creek, which flows into the Alabama River. The Alabama River, at Montgomery, has a minimum flow of 52,000 cfs and a maximum flow of 284,000 cfs for the period of record 1886-1961.

4.2.4 METEOROLOGY

Based on climatological data at Birmingham Municipal Airport, summers are long and hot. On a typical mid-summer day, the temperature will be nearly 70 degrees at daybreak, approach 90 degrees at mid-day, and level off in the low 90s during the afternoon. It is not unusual for the temperature to remain 100 degrees for several days in a row. However, every few years an extended heat wave will bring temperatures over 100 degrees. July is normally the hottest month but there is little difference from mid-June to mid-August. Rather persistent high humidity adds to the summer discomfort.

January is normally the coldest month but there is not much difference from mid-December to mid-February. Overall, winters are relatively mild. Even in cold spells, it is unusual for the temperature to remain below freezing all day. Sub-zero cold is extremely rare, occurring only a very few times this century.

Snowfall is erratic. Sometimes there is a two or three year span with no measurable accumulation. On rare occasions, there may be a two to four inch snowstorm. The snow usually melts quickly. In a normal year, the last 32 degree minimum temperature in the spring is in mid to late March and the first in autumn is in November.

Rainfall is abundant and is fairly well distributed throughout the year. However, some of the wetter winter months, plus March and July have twice the rainfall of October, the driest month. Summer rainfall is almost entirely from scattered afternoon and early evening thunderstorms. Serious droughts are rare and most dry spells are not severe. The stormiest time of the year with the greatest risk of severe thunderstorms and tornadoes is in spring, especially in March and April.

The prevailing wind is south with a mean speed of 7.2 miles per hour.