SEEP AND SPRING INVENTORY OF THE CRANDALL CANYON MINE PERMIT AND ADJACENT AREAS

1.0 INTRODUCTION

The Crandall Canyon Mine is an underground coal mine operated by Genwal Coal Company in Emery County, Utah, Sections 5 and 6, T. 16 S., R. 7 E., SLBM. The mine operates under an existing permit from the Utah Division of Oil, Gas, and Mining covering an area of 80 acres (referred to as Tract 1). Genwal has applied for a permit to extend their mining operation to the north into an area referred to as Tract 2 covering an area of approximately 75 acres.

On June 6 and 7, 1985 a field investigation was conducted to identify the location and characteristics of all seeps and springs within the permit and adjacent areas. This report presents the results of this inventory as well as an interpretation of the data collected therefrom.

Six formations outcrop within the Crandall Canyon Mine permit and adjacent areas (Figure 1). According to Doelling (1972), the Masuk Shale Member of the Mancos Shale (Km on Figure 1) is a light gray to blue-gray marine sandy shale. This unit is exposed at the mouth of Crandall Canyon and in adjacent areas along Huntington Creek.

The Star Point Sandstone (Ksp) is predominantly a light gray massive sandstone with minor interbedded layers of shale and siltstone. In the vicinity of the mine, the Star Point Sandstone is 700 to 900 feet thick.

The Blackhawk Formation (Kb) is the principal coal-bearing unit in the region. This formation consists of interbedded layers of sandstone, shale, and coal. The Blackhawk is about 1000 feet thick in the mine area, with the principal coal seam (the Hiawatha seam) occurring near the bottom of the formation.

The Castlegate Sandstone (Kc) overlies the Blackhawk Formation and consists of cliff-forming sandstones of fluvial origin. The sandstones are massive and medium to coarse grained. In the area of the mine, the Castlegate Sandstone is approximately 300 feet thick.

The Price River Formation (Kpr) consists predominantly of friable limy sandstone interbedded with pebbly conglomerates and shales. It forms steep receeding slopes and is about 500 feet thick in the mine area.

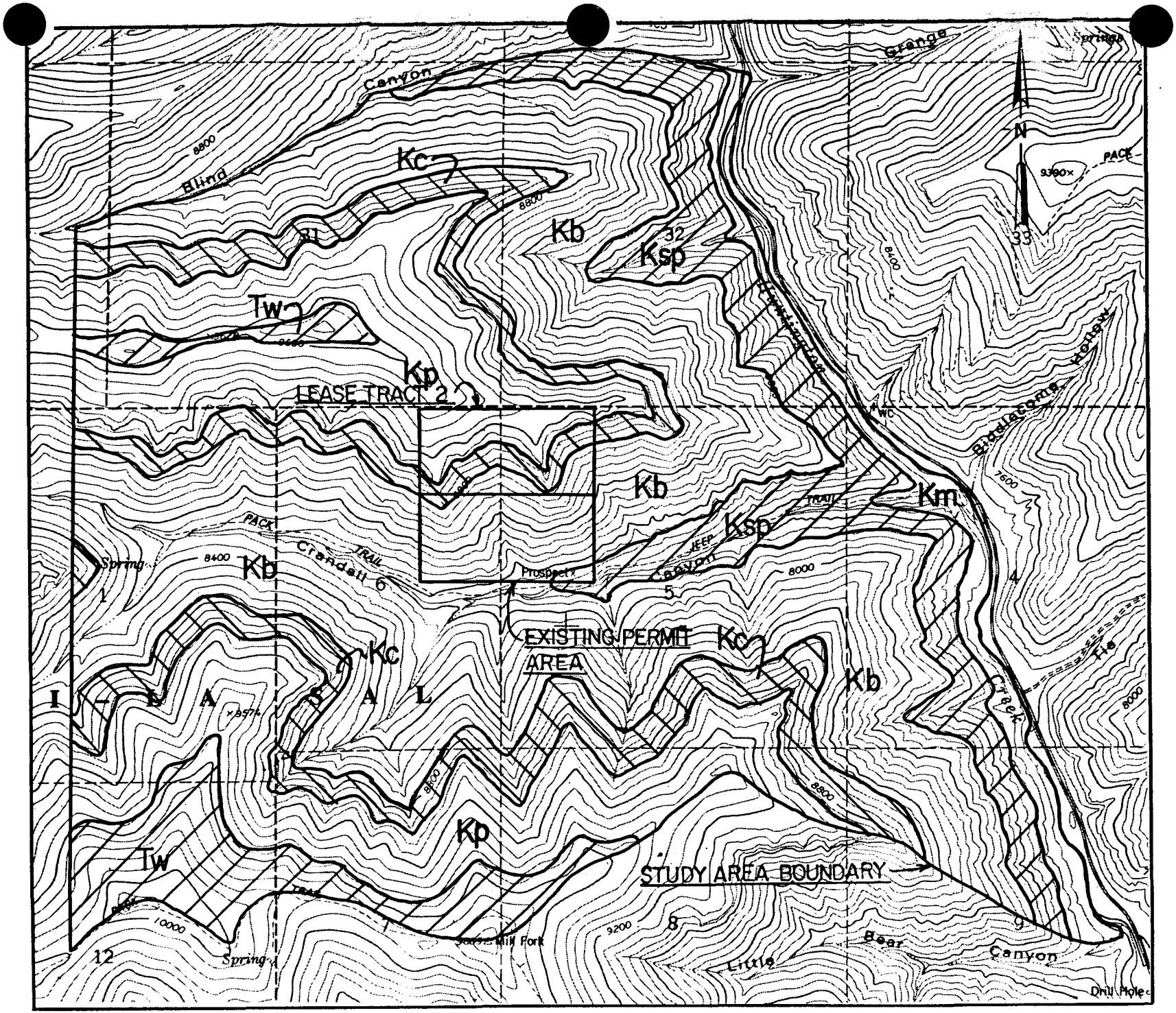

Figure 1. Geology of the Crandall Canyon area.

The uppermost formation that outcrops within the study area is the North Horn Formation (Tw). This formation consists of interbedded limestones, sandstones, and shales. Due to high topographic presence but limited areal extent, the North Horn Formation serves primarily as a recharge unit to underlying formations rather than as an important source of water itself.

The remainder of this report is divided into four sections. Section 2.0 discusses the methods used during the inventory, followed by a presentation and discussion of the results in Section 3.0. The potential impacts of mining on the seeps and springs are presented in Section 4.0. Section 5.0 provides a list of references cited in the report.