Surface Mine Reclamation

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INTRODUCTION

The coal and aggregate mining industries are vital to the Illinois economy. The state’s industrial growth has been fueled by Illinois coal for the past century and a half, and coal remains a crucial energy source for the state’s electricity-generating plants. A growing economy also relies on the crushed stone and sand and gravel aggregate that are essential components of concrete and asphalt. Once these important mineral reserves have been mined, mine site reclamation is needed.

A century ago, land was cheap, and much of the state was rural. Coal mines, stone quarries, and sand and gravel pits were simply left abandoned when mining ceased. Today, mine reclamation is mandated by state and federal regulations, but the reasons for reclamation go beyond those regulations. The economics are obvious—land is valuable. Appearance also is important because mined land that is reclaimed and returned to use enhances its value for everyone in the community. Also, the necessity to protect and restore the environment is well understood. Depending on the specific mine type and site conditions, mine reclamation is engineered to control various environmental concerns, such as erosion and stormwater runoff, barren or eroding mine spoils and refuse piles, acid mine drainage, hazardous mine highwalls, and the safety of dilapidated mine buildings and equipment.

Mine reclamation methods in Illinois are varied and tailored to the type of mine—coal mine, sand and gravel pit, or stone quarry—and the type of mining method. The choice of final end use takes into consideration factors such as site location, mine characteristics, type of mining methods, land ownership, and community needs. Illinois has been a leader in mine reclamation, and several reclaimed sites have won national awards, such as those received by the Max McGraw Wildlife Foundation near Elgin (Figure 30-1) and Vulcan Materials’ Casey Quarry, near the town of Casey in Clark County, east-central Illinois. Reclaimed Illinois mines have been converted to sites for housing developments and schools (Figure 30-2), recreation (including parks, athletic fields, biking and picnic areas, golf courses, and fishing and swimming lakes), shopping centers, industrial developments, row-crop agriculture, pasture, forests, and wildlife habitat.

RECLAMATION OF SURFACE COAL MINES

The coal industry has long been an important component of the Illinois economy. Coal first fueled the rise of the state’s railroad system and heated the nation’s homes and businesses. Now coal is a major energy source for electricity-generating stations. More than 4,500 coal mines have operated since commercial mining began in Illinois about 1810, but fewer than 20 mines are currently active. Illinois coal is mined in either surface (formerly called strip mines) or underground mines (see Chapter 14, Coal).

Reclamation of land used for surface mining has two primary goals: (1) to return the land to productivity with a usable contour and (2) to protect the environment. Surface-mine reclamation considers several factors, including the effects of the surface-mining process on land-surface

Figure 30-1  This aerial photograph of the Max McGraw Wildlife Foundation site near Elgin in Kane County demonstrates how reclaimed sand and gravel pits can provide important lake and upland wildlife habitat in urban areas where natural wildlife areas have otherwise been largely lost to development. An active sand and gravel operation is shown in the background. (Photograph provided courtesy of Meyer Material Company, McHenry, Illinois.)