

**ILLINOIS DEPARTMENT OF NATURAL RESOURCES
CULTURAL RESOURCE MANAGEMENT PROGRAM
ABANDONED MINED LANDS RECLAMATION
CULTURAL RESOURCES EVALUATION**

**U. S. FUEL COMPANY, BUNSENVILLE MINE
BUNSENVILLE, ILLINOIS**



by
Christopher Stratton

prepared by
Fever River Research
Springfield, Illinois

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Principal Investigator

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FINAL

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Locational Information and Survey Conditions

County: Vermilion

Quadrangle: Georgetown (1966)

Project Type/Title: Phase II archaeological survey of U. S. Fuel Company Bunsenville Mine reclamation project (AML-GveE-0107).

Responsible Federal/State Agencies: IDNR (Division of Abandoned Mined Lands)

Legal Location:

N1/2, NW1/4, SE1/4 and N1/2, NE1/4, SE1/4

Section 26

Township 8 North, Range 12 West (Georgetown Township)

Vermilion County,

Illinois

UTM: 4426631m North

441858m East

Project Description: Archaeological and archival assessment of the proposed reclamation project for the U.S. Fuel Company Bunsenville Mine Site, an early-to-middle-twentieth-century (1916-1947) coal mine property which is slated for reclamation. The Bunsenville Mine was one of the largest shaft shipping mines in the State of Illinois at the height of its production (Department of Mines and Minerals[DMM]1935:33). The reclamation will involve covering voids left from previous demolition the backfilling and sealing (as needed) of any shafts, and the regrading of the mine refuse pile to stabilize its slopes. Borrow will be obtained off site (Division of Abandoned Mined Lands [2001]). The intention of the survey was to record those building foundations at the site that will be directly impacted by the reclamation work and to document additional mine-related building and structural remains that aid in understanding the mine complex but will not be impacted by the reclamation.

The Bunsenville Mine previously was determined not eligible for the National Register of Historic Places by the Illinois Historic Preservation Agency. Although many abandoned mines may not be eligible for the National Register due to demolition and landscaping that occurred after the mine closed, IDNR and IHPA recognize that individual mines may contain limited information on the material culture and the site structure of Illinois coal mines—information which further elaborates or fills in gaps in the archival record. Consequently, although traditional National Register evaluations are not required for these mines, IDNR is conducting limited documentation on them with the understanding that, in a cumulative way, this documentation will lead to a better understanding of the material culture and site structure associated with the Illinois coal industry.

Topography: The area surveyed is located in an uplands setting, three-quarters of a mile west of Fairview Drain and three miles north of the Little Vermilion River. The nearest

community is Bunsenville, which was established in connection to the mine and lies directly south of it. Never large to begin with, Bunsenville presently contains less than twenty residences and has no businesses. The principal urban center in the vicinity of the mine is Georgetown, situated two and one-half miles to the east of Bunsenville. Since its abandonment, the mine site has become covered with second-growth timber and brush. The one exception to this is the refuse, or “gob”, pile associated with the mine, whose upper slopes largely remain free of vegetation. The gob pile occupies approximately 16 acres at its base and rises approximately 170 feet above the surrounding plain. The surface complex associated with the mine is located on the west side of the gob pile. Area residents have used the mine site for a variety of recreational purposes, including sledding and the driving of four-wheeled vehicles. Paths—cleared as a result of the latter activity—crisscross the site. The mine site also has been used as a dumping ground for trash and appliances in the past.

Soils: Sidell-Catlin-Flanagan-Drummer

Drainage: Fairview Drain, Little Vermilion River, Wabash River

Land Use/Ground Cover: Second-growth timber and brush

Survey Limitations: The greatest limitation to the survey was the demolished state of the buildings themselves. All of the buildings have been cleared down to their foundations, and in some instances the rubble was left in place or used to fill basements, thus obscuring structural details. Portions of some building remains are now covered with overburden and detritus.

Archaeological and Historical Information

Historical Plats/Atlases/Source:

Vermilion County is located in east-central Illinois, along the state’s border with Indiana, and lies along the upper end of the Wabash River valley. The Vermilion River and its three main branches—the North, Middle, and Salt Forks—water the northern and central sections of the county, while the Little Vermilion River crosses the southern half of the county. Permanent Euro-American settlement in the county dates to November 1819, when Captain Truman Beckwith and his associates established a salt works at the “Vermilion Salines,” which were located along the Salt Fork of the Vermilion River, near the present-day town of Catlin. Salt production was the first industry established in the county, and it provided an initial impetus to settlement there. The state legislature officially created Vermilion County in January 1827. The following year, the town of Danville was platted out on the north bank of Vermilion River to serve as the county seat (Williams 1930:89-91, 142-145). Danville’s most prominent early citizen was Gurdon S. Hubbard, who directed the American Fur Company’s operations in the region between the Illinois and Wabash Rivers during the period 1824-1832. In 1827 Hubbard established a trading post in Danville, which became the principal trading center within his jurisdiction. Rather than moving his goods and furs by water, as his predecessors had done, Hubbard sent them overland on a trail he had previously blazed between the Vermilion Salines and Chicago. Fittingly named Hubbard’s Trail, or Trace, this route served as an important

transportation corridor connecting the Wabash River valley with Chicago during the early nineteenth century. Due to the decline of the Indian trade, Hubbard switched his Danville trading post into a conventional mercantile in 1832. The following year, he sold his store and moved to Chicago, where he enjoyed a successful career as an entrepreneur (Williams 1930:151-152; Quaipe 1968:59-60). Danville ultimately developed into an important industrial and rail center and one of the largest cities in Illinois. Georgetown, which is located several miles east of the Bunsenville Mine, was platted out in 1827, two months later than Danville (Williams 1930:270).

Although local coal resources in Vermilion County were exploited to some extent for blacksmithing from the earliest days of settlement, efforts at commercial coal mining did not begin until the middle 1850s, when the expanding railroad system created both a market and mode of transportation for the fuel. Coal mines were opened all around Vermilion County during the Civil War era, with varying success, but they were particularly concentrated in the vicinity of Danville. These early mines generally were located close to rivers or streams, where coal was observed eroding out of the banks, and were primitive affairs compared to later operations. Rather than sinking a vertical shaft (which could be a difficult procedure and involve the construction of a hoist), many early mine operators chose to approach a coal seam by means of a horizontal tunnel excavated into the face of slope (known as a slope or drift mine) or by stripping away the face of coal seam without digging underground (known as a strip bank mine) (Beckwith 1879:334-335).

One early shaft mine was located on the W. B. Squire property in Section 25 of Catlin Township. The cage for this mine was operated with a horse-powered gin hoist, and the coal extracted was transported by wagon (Brink and Company 1875) (see Figure 2). In contrast, a contemporary shaft mine operated by the Ellsworth Coal Company south of Danville, was steam powered and could ship coal on the adjacent Toledo, Wabash, and Western Railroad (see Figure 3). In 1879, the Ellsworth mine was producing several hundred tons of coal per day. That same year, fifty-four coal mines were in operation around Vermilion County; fifteen of these were shaft mines, while fourteen were drift, three were slope, and twenty-two were “strip banks.” Combined, the mines had produced 200,000 tons of coal and had employed 325 men and 100 horses and mules (Beckwith 1879:337-338).

Another method of extracting coal was strip mining. This mining technique generally was done on level ground and involved the removal of the overburden covering a coal seam, thus eliminating the need for any underground work. Strip mining was less prevalent in Vermilion County than in other sections of the state, but the method was attempted at a relatively early date there. In 1885, the Consolidated Coal Company contracted with Wright and Wallace, drainage contractors and dredgers from LaFayette, Indiana, to strip coal on a piece of bottomland known as “Missionfield,” located west of Danville. Wright and Wallace converted steam-powered dipper dredges (typically used in the clearing of waterways) for this purpose. The redesigned machine was referred to a “dry land dredge” and could make cuts up to 20’ wide (see Figure 4). Dry land dredges continued to be used at Missionfield until 1890, when they were replaced by more efficient machinery (Jacobson and Bengal 1981:ii).

Vermilion County’s coal industry expanded dramatically during the late nineteenth and early twentieth centuries. By 1910, the county was ranked eighth in the state for coal production, with 2,033,467 tons having been extracted (reference Table 1). At that date, there were twenty-four local mines and fourteen shipping mines operating in the county. The principal distinction between the two mine categories lay in their method of shipment and distribution: local mines serviced the local coal market and transported by means of wagon and truck, while the shipping mines transported their coal by rail to distant markets, besides selling it directly to the railroads for locomotive fuel. Shipping mines also sold coal to local customers, but this typically represented a small share of their overall production. The distinction is not based on tonnage, since there is considerable overlap in the range of production between the two categories. At the extremes of production, this overlap does disappear: the top local mine in 1910, for instance, produced significantly less (68,673 tons) than the top shipping mine (505,519); and the same holds true when one compares the least productive local mine (287 tons) with the lowest producing shipping mine (7,696 tons) (DMM 1910:342-343). Significant disparities in respect to mine size and layout existed *within* the mine categories as well (compare Figures 5 through 7 and 9 through 12).

Table 1
Statistics on Coal Mining in Vermilion County
1910-1945

YEAR	RANK IN STATE	TOTAL TONNAGE PRODUCED	SHIPPING MINES		LOCAL MINES	
			NUMBER	RANGE IN TONNAGE	NUMBER	RANGE IN TONNAGE
1910	8	2,033,467	14	7,696 -- 505,519	24	287 – 68,673
1915	8	1,011,881	9	12,711 – 659,143	21	320 – 73,686
1920	8	3,248,946	14	34,014 – 839,573	43	300 – 72,771
1925	9	1,655,831	8	1,852 – 534,469	57	15 – 56,958
1930	8	2,668,583	7	14,483 – 886,723	82	<1000 – 94,978
1935	9	1,998,000	7	1,163 – 696,898	139	20 – 67,589
1940	10	2,165,696	6	7,777 – 798,963	77	145 – 44,805
1945	?	2,216,046	5	10,804 – 1,023,256	21	136 – 33,354

A significant number of large shipping mines were established along the railroad lines running south of Danville (see Figure 8). The Catlin Coal Company and the Taylor-English Coal Company, for example, opened mines along the Toledo, Wabash, and Western (Wabash) Railroad, adjacent to the town of Catlin (see Figure 10 and 11). Even larger mines were opened along the lines of the Cleveland, Cincinnati, Chicago, and St. Louis (CCC&StL) and the Chicago and Eastern Illinois (C&EI) Railroads. The CCC&StL ran due south of Danville, though the towns of Westville and Georgetown, and serviced the Little Vermilion Mine among others. The C&EI took a more circuitous route south of the Danville before angling to the southwest, passing through Westville and crossing the CCC&S tracks along its way. Mines serviced by the C&EI

included Kelly (later Bunsen and U S. Fuel) Mine Nos. 3 and 4, Peabody No. 24, and Bunsenville.

In 1908-1909, the Bunsen Coal Company purchased four of the largest shipping mines around Westville. The company first acquired the Little Vermilion Mine, which was located midway between Westville and Georgetown and had previously been operated by the Little Vermilion Coal Company as Mine No. 1 (DMM 1909:273). Then, in November 1909, Bunsen assumed ownership of Kelly Mine Nos. 2, 3, and 5. The Kelly mines had been established by Michael Kelly, a pioneer in Vermilion County's coal industry, who had developed them into some of the county's most valuable coal properties. The mines were poorly managed by Kelly's heirs after his death, however, and were plagued by frequent management changes and lack of capital. In 1904, Mine No. 3 was destroyed in a fire and abandoned indefinitely. By 1909, Mine Nos. 2 and 5 also had closed, though they still remained operable. Given this situation, the Bunsen Coal Company's acquisition of the Kelly properties was welcomed by Westville residents, who were relieved to see the company implement an aggressive renovation program for all their mines. The company even reopened Mine No. 3, where they rebuilt all of the main surface structures (office, boiler house, engine house, shop, tippie, main track, etc.) and cleaned and improved the works below ground (see Figure 13). Two improvements where Bunsen was in advance of its competitors was the installation of first-rate fire fighting equipment and the construction of first aid hospitals at each one of its mines (DMM 1910:235-238). All of the Bunsen mines were producing coal by 1910, save for No. 3, which was brought on line the following year. Coal reports published in 1911 and 1912¹ detail on-going improvements at the company's mines (DMM 1911:275-276; 1912:272-275).

The Bunsen Coal Company was responsible for the initial development of the Bunsenville Mine. This project was briefly described in the 1914 coal report, as follows: "The Bunsen Coal Company is sinking a mine 2½ miles West of Georgetown, Vermilion County. The hoisting shaft will be 20 feet 2 inches by 11 feet and the escapement shaft, 25 feet by 11 feet. The mine will be a large producer" (DMM 1914:171). The company had purchased the N1/2, SE1/4 Section 26 of Township 18 North, Range 12 West for the site of the mine's surface complex. County atlases published in 1895 and 1907 indicate Sarah F. Baker as the owner of this 80-acre tract and illustrate no buildings upon it (Ogle 1895:123; Bouridnot 1907:20). In expectation of the mine's eventual opening, Clay F. Lynch platted out the town of Bunsenville immediately south of the mine site in May 1914. The original plat of Bunsenville covered the entire S1/2, SE1/4 of Section 26 and contained 491 lots. The north/south running streets were designated as avenues and were named Gray, Joliet, and S. Chicago (moving from east to west). Starting on the north and moving south, the east/west running streets were named Main, Bunsenville, Baker and Vermilion (Vermilion County Plat Record 4:274) (see Figure 14). Since the Bunsenville Mine was located several miles away from Georgetown and Westville, Lynch probably thought that workers would be interested in building homes in Bunsenville and that businesses might also be attracted. The 1915 atlas of Vermilion County illustrates Bunsenville and indicates the location of the coal shaft there (see Figure 15).

¹ The *Annual Coal Report* was compiled by the Illinois Division of Mines and Minerals and ran from July of the preceding year through June of the year published. Hence, the report for 1913 covers the period July 1, 1912 to June 30, 1913.

In 1916, the Bunsen Coal Company stopped production at Mine No. 2 and converted it into a pumping station for their other mines in the area. Water pumped from Mine No. 2 was directed to a 300,000-gallon water tank at Mine No. 3, from which pipes radiated outward toward the Vermilion Mine, Mine Nos. 3 and 4, and the Bunsenville Mine, creating a network of piping seven miles long.² The water was used for a variety of purposes around the mines, supplying the boilers, washhouses, surface fire hydrants, and fire fighting equipment underground (sprinkler system etc.) (DMM 1916:169).

Bunsenville Mine finally started production in late February 1916. By the end of June, the mine had produced 16,448 tons of coal. Due to the mine's late start in the reporting year (June-June), it was not given a full listing in the coal report that was filed for 1916 (BMM 1916:29). In 1917, the mine's first full year of operation, it was ranked eleventh among Vermilion County's shipping mines, with a total output of 29,796 tons. The mine had 93 employees and operated for 155 days out of the year (DMM 1917:182-183). Shortly after the Bunsenville mine was coming into full production, the Bunsen Coal Company sold the coal rights to its Vermilion County mines to the United States Fuel Company, which was a subsidiary of the U. S. Steel Corporation. The 1917 *Annual Coal Report* announced the change in ownership and indicated that U. S. Fuel's intention to maintain the existing mine names (DMM 1917:173). U. S. Fuel and its later derivative, the United States Coal and Coke Company, would operate the Bunsenville Mine for thirty years, until its closure in 1947. U. S. Fuel's local office was located at 157½ N. Vermilion Street in Danville.

The surface complex at the Bunsenville Mine was quite large and modern in character. There are no known Sanborn maps of the mine, but we do have a map of its underground working that also illustrates buildings on the surface. The building and structures illustrated include a large tipple structure (consisting of both hoist shaft and shakers), a boiler house, combination hoist room and electrical substation, a blacksmith shop, a shop of unknown function, a car repair shop, another substation, a bathhouse,³ a check house, a fan house, an office, a garage, a water tower, a pump house, a combination store room/office/hospital, an oil house, a cement house, a stable, a sand drier, a water softener, and a powder house (see Figures 16 and 17). In contrast to the earlier generation of mines, whose structures mostly were of frame construction, the majority of the buildings at the Bunsenville Mine were of masonry construction. Many of the buildings were brick, though some (such as the fan house and powder house) were built entirely of reinforced concrete, while others (like the tipple and water tower) were of steel construction. Several smaller buildings, like the garage and cement house, were frame with steel siding. The mine was connected to the C&EI Railroad by means of spur line that ran along the north side of the site. Four separate tracks passed beneath the tipple, while several other tracks serviced different sections of the mine site (DMM 1947b). Waste hauled from the mine was deposited in a dump located immediately east of the surface complex. Electrical and hoisting power for the mine was supplied on site and was steam generated. Several historic photographs of the surface complex,

² Bunsen Mine No. 5 apparently ceased operating in 1912 (Illinois State Geological Survey 2000:10). The reason for the closure is not indicated in the *Annual Coal Report*.

³ At many other mines in Illinois (particularly in the southern part of the state), these buildings typically are referred to as "washhouses," rather than bathhouses. The 1947 map of the Bunsenville Mine, however, refers to Feature 3 as a washhouse, as does the 1977 history of Georgetown (DMM 1947b; Stark and Brown 1977).

taken during the period that the mine was in operation, have been attached as Figures 18 through 20.

In respect to its underground works, the Bunsenville Mine had a shaft that was 204' deep and was concreted along its full height. The coal extracted was from the Herrin (No. 6) seam, which was 6' thick in the vicinity of Bunsenville, and the mining was done by the room-and-pillar method. During the mine's first years of production all of the mining was done by hand. Starting in 1919, however, coal-cutting machines began to be used, and they eventually supplanted hand mining, a trend that rapidly accelerated after 1925. The last year hand-excitation was reported at the mine was 1931-1932, when only 37 tons of coal were mined by this manner compared to 541,618 tons by machine. During the mine's last two decades of operation, anywhere from 24 to 33 cutting machines were in use, depending on the year. Another transition that occurred in the mine was in respect to haulage. Mules and motors both were used in the Bunsenville Mine, but like the coal cutting, hauling became increasingly mechanized over time. Mules did most of the work until 1924-1925, when the number of motors in use in the mine was increased from two to twelve. Mules were still relied upon after this date, reaching a peak number of 35 in 1927, but their numbers dropped as more motors were added to the system. In 1935-1936, the number of motors was increased from eighteen to twenty-six, leading to a corresponding drop in the mule force from seventeen to three. Except for the three-year period between 1938 and 1940, three animals continued to be used in the mine until its closure (DMM 1917-1947). These changes are reflective of a broader trend toward mechanization and deskilling of mining in the Illinois coal industry during the 1920s and 1930s. Two photographs of the underground workings at Bunsenville are illustrated in Figure 21.

U. S. Fuel constructed a small residential development for its managerial staff immediately southwest of the Bunsenville Mine. This development was separate from the town of Bunsenville and contained eight two-story frame houses, arranged four-to-a-side along a single street (see Figure 22). The dwellings were reserved for the mine superintendent, assistant superintendent, managers, and foremen (Delores Rice, pers. comm., 26 February 2002). U. S. Fuel supplied the development with such amenities as water, sewer, and sidewalks. This housing will be discussed in more detail below. Some of the miners employed at the mine resided in Bunsenville, but most commuted in from Georgetown and other surrounding communities. Bunsenville never did experience much growth, and as few as fifteen houses were constructed in the town during the period the mine was in operation. Most of these fronted Main or Bunsenville Streets (USGS 1947) (see Figure 22). The town also had a grocery store, located at Main and Gray, a tavern, a Ford garage, and a one-room schoolhouse. A shantytown reportedly was located adjacent to Bunsenville for a time, apparently having arisen as a result of a shortage of housing in the area (Wells 1992; Troy Pate, pers. comm. 25 February 2002). A large section of Bunsenville's plat was vacated in 1942 (Vermilion County Plat Record 6:72) (see Figure 26).

Production at the Bunsenville Mine varied over time, as did the size of its work force. Ranked eleventh amongst shipping mines in Vermilion County during its first full year of operation (1916-1917), Bunsenville steadily increased its production over the next seven to eight years, becoming the county's top shipper by 1925. The mine's rise in ranking was assisted in part by U. S. Fuel's decision to close down some of its older mines. Mine No. 3 was abandoned in 1921-1922, and No. 4 closed in 1922-1923 (DMM 1922:160; 1923:206; 1929:140). The age of

these mines and the expense of their operation, in the midst of general depression in the coal market following the end of World War I, undoubtedly contributed to their closures. After 1923, the number of mines operated by U. S. Fuel in Vermilion County was reduced to two: Vermilion and Bunsenville. The former had been the top producer between 1917 and 1923, but after 1924-1925 Bunsenville became U. S. Fuel's flagship mine in the county. Except for one year (1932), it remained the number one shipping mine in Vermilion County until its closure in 1947.

The 1920s and 1930s were uncertain times for the Illinois coal industry. The total number of shipping mines in operation in Vermilion County dropped from fourteen in 1920 to eight in 1925 (reference Table 1). During the same period, overall coal production in the county declined by nearly half, dropping from 3,248,946 tons to 1,655,831 tons. The drop in production caused the Vermilion's ranking among coal producers in the state to slip from eighth to ninth place. Coal production did recover after 1925 (though never quite surpassing the tonnage compiled in 1920), and that it was able to do so, even as shipping mines were closing, is a testimony to the increased mechanization of the mines that remained open. At Bunsenville, for instance, production jumped dramatically between 1925 and 1926, when the coal mined increased from 534,469 to 1,230,774 tons in a single year.⁴ The number of employed at the mine had risen as well, going from 503 in 1923, to 1,503 in 1925, and then leveling off at 1,039 in 1926 (DMM 1923:206-207; 1925:106; 1926:158-159). It is likely that many of the miners formerly employed at Mine Nos. 3 and 4 were hired on at Bunsenville after those mines closed. Production and other statistics on the Bunsenville Mine are detailed in Tables 2 and 3.

The Great Depression presented another challenge to the shipping mines in Vermilion County, since decreased industrial output meant less of a demand for coal by both factories and railroads. U. S. Fuel stopped production at its Vermilion Mine in March 1932 and never resumed (DMM 1935:13). The surface complex at the Vermilion Mine later was dismantled (see Figures 23 and 24). The coal industry did show signs of recovery towards the mid-1930s. Production in Illinois for the five-year period 1931-1935 reached a peak in 1935, in respect to number of local and shipping mines in operation, as well as in respect to production. The Bunsenville Mine in 1935 produced 1,044,440 tons of coal and was ranked number three among shipping mines in the state. The work force at the mine also increased during this period (DMM 1935:33). Production at Bunsenville topped one million tons again in 1936 and 1937, before dropping to only 605,203 tons in 1938 (DMM 1935: 182-183; 1936:176-177; 1937:192-193). This sharp decline was probably linked to the recession of 1937. The year had started out well, with the Roosevelt Administration proclaiming that the Depression was at an end and recovery had begun. In the fall of that year, however, the economy plummeted. The Stock Market crashed, as swiftly as it had in 1929, and industrial production declined by 40 percent. On the whole, the economy declined by 35 percent from its high in the summer of 1937 (Brinkley 1995:23-24; 28-29).

Interestingly, the number of local mines operating in Vermilion County actually increased during the Great Depression, rising from fifty-seven in 1925, to eighty-seven in 1930, and 137 in 1935 (reference Table 1). The cost of operating these mines was considerably lower than that for shipping mines, and most were small producers. Forty-nine of the local mines in operation in 1930, for example, produced less than a 1,000 tons each (DMM 1930:142). In 1935, forty independent local mines were operating in Hoover Hollow alone. The Hollow was located north

⁴ The tonnage produced between July 1925 and June 1926 proved to be the highest in the history of the mine.

of Tilton on a 400-acre tract owned by Blackburn University and had been strip mined earlier in the century. The coal reserves left behind were considered inconsequential until the Depression hit, and unemployed coal miners, as well as mining novices, started mining coal in the Hollow in a desperate effort to earn an income. The mining methods were crude and labor intensive: excavation and loading was done by hand; mine hoists, where present, were powered by automobile engines; and the coal extracted was hauled away one truck-load at a time. The owners of the land received a royalty of 30 cents per ton of coal extracted. One miner admitted that he and his cohorts didn't make much money but added, "it's at least a winter's vacation and a place to work" (Hackman 1935).

World War II fueled an increase demand for coal, and production rose once again at the Vermilion County mines, and at Bunsenville in particular. In 1943, 1,218,497 tons of coal were produced at the Bunsenville Mine—a tonnage that nearly matched the mine's peak production of year 1925-1926; more significantly, this represented 49 percent of the total coal production in Vermilion County for the year (DMM 1943:114-115). The mine was able to maintain a high level of production through the course of the war, even with a work force that was significantly smaller than it had been during the doldrums of the Great Depression. In 1932, for instance, 1,768 workers had been employed (an all-time high), whereas during World War II the number of employees stayed around a thousand.

In April 1947 the United States Coal and Coke Company—the name U. S. Fuel had operated under since 1941—stopped production at the Bunsenville Mine and announced that it would be dismantled. The reasons cited by the company included increased costs of production and lower demand for coal due to competition from other fuels. The decision by the Elgin, Joliet, and Eastern Railroad (the successor the Chicago and Eastern Illinois) to adopt diesel locomotives certainly played a role in the decision, since railroad companies represented the Bunsenville's principal customer base and had purchased a growing share of the mine's coal throughout the 1930s and 1940s. Vermilion County coal was considered good for generating steam but inadequate for coking steel, thus eliminating another potential market (*Danville Commercial News* 22 April, 25 April 1947). One factor in the higher cost of production at the mine was the continued dependence on the hand loading of mine cars there. At the time of its closure, the Bunsenville Mine was the largest hand-loading operation in Illinois. The mine's failure to mechanize this aspect of production seems odd, given its early adoption of machine cutters and motors. Three machine loaders were being used in the mine in 1945, but they were responsible for less than a third of the total tonnage loaded (DMM 1945:55). Company officials stated that the mine had been operating at a loss for twenty years (losing \$180,000 annually in the last ten year) but had been kept open to supply the Chicago market. Vermilion County residents understandably were dismayed by the prospect of the Bunsenville Mine closing. In 1947, the mine employed around 700 workers and had a monthly payroll of \$150,000. Moreover, the area had already been hit by a large-scale layoff in March of the previous year, when the Chicago-Harrisburg (formerly Peabody) Mine No. 24 in Catlin closed and 550 workers lost their jobs (*Danville Commercial-News* 24 April, 25 April 1947). Hoping to keep the Bunsenville Mine open, a committee of local officials traveled to Pittsburgh, to appeal directly to Harry Moses, the president of the U. S. Coal and Coke Company. Moses, whose father had begun his mining career in Vermilion County, was sympathetic but could only agree to delay the dismantling of the mine until June 30 to allow the committee time to find a potential purchaser (*Danville*

Commercial-News 27 April, 11 June 1947). The committee failed to find a purchaser, however, and the mine was never reopened (see Figure 25). At the time of its closure, the underground working of the Bunsenville Mine extended over approximately six square miles.

By 1954, the town of Bunsenville was reduced to a quiet village with a population of 100 (Drury 1954:15, 150). The following year, the United States Steel Corporation—the parent company of U. S. Coal and Coke—sold the managerial housing located adjacent to the Bunsenville Mine to individual owners (Vermilion County Deed Record 599:456; 600:33; 600:166; 600:169). The majority of the buildings in the mine's surface complex appear to have remained standing as late as 1966 (USGS Georgetown, IL quadrangle 1966).

Table 2
Statistics on the Bunsenville Mine, Part I
1917-1947

YEAR	RANK	TONS MINED	TONS SHIPPED	TONS SOLD TO RR	TONS SOLD LOCALLY	TONS USED AT MINE	TONS MINED BY HAND	TONS MINED BY MACHINE
1917	11	29,796	28,040	0	126	1,630	29,796	0
1918	8	146,077	139,433	2,304	428	3,912	146,077	0
1919	5	182,413	175,665	1,687	410	4,651	172,252	10,161
1920	4	245,231	238,739	0	435	6,057	120,324	124,907
1921	4	293,376	153,157	131,642	511	8,066	134,501	158,875
1922	4	283,973	207,210	68,472	568	7,723	145,232	138,741
1923	3	400,732	278,300	111,864	808	9,760	214,793	185,939
1924	?	?	?	?	?	?	?	?
1925	1	534,469	386,265	145,298	1,403	1,503	101,255	433,214
1926	1	1,230,774	876,840	345,195	3,479	5,260	206,710	1,024,064
1927	1	1,296,163	916,699	369,201	9,183	1,080	153,869	1,142,294
1928	1	1,022,354	667,585	350,391	1,443	2,935	32,054	990,300
1929	?	?	?	?	?	?	?	?
1930	1	886,723	552,728	328,729	1,971	1,035	4,851	881,872
1931	1	731,119	537,744	188,616	1,534	3,225	187	730,932
1932	2	541,655	397,668	138,035	3,715	1,958	37	541,618
1933	1	957,521	692,970	252,068	8,160	2,635	0	957,521
1934	1	1,009,404	732,370	262,128	9,650	3,050	0	1,009,404
1935	1	1,044,440	696,898	330,493	11,402	3,335	0	1,044,440
1936	1	1,135,181	673,313	441,318	14,392	3,690	0	1,135,181
1937	1	1,013,114	555,967	434,644	15,006	4,241	0	1,013,114
1938	1	605,203	335,175	248,482	10,514	3,354	0	605,203
1939	1	771,808	404,896	350,945	10,930	2,980	0	771,808
1940	1	798,963	337,807	445,533	12,593	3,030	0	798,963
1941	1	832,056	376,651	442,008	10,747	2,650	0	832,056
1942	1	908,483	374,634	516,000	15,089	2,760	0	908,483
1943	1	1,218,497	742,992	436,574	32,216	3,175	0	1,218,497
1944	1	1,198,718	385,700	775,671	30,662	3,145	0	1,198,718
1945	1	1,023,256	539,126	417,949	60,536	3,210	0	1,023,256
1946	1	814,432	426,492	321,556	62,352	2,965	0	814,432
1947	1	270,472	114,337	127,624	27,063	980	0	270,472

Table 3
Statistics on the Bunsenville Mine, Part II
1917-1947

YEAR	MACHINES	MOTORS	ANIMALS USED UNDERGROUND	EXPLOSIVES USED*	NUMBER OF EMPLOYEES	DAYS OF OPERATION	DEATHS/ INJURIES	NO. ACCIDENTS
1918	0	0	4	1,509 k.p.	93	155	2 injured	?
1918	0	1	12	6,376 k.p.	182	289	1 killed, 2 injured	8
1919	3	1	16	7,358 k.p.	223	228	2 killed, 5 injured	5
1920	4	1	14	6,560 k.p.	266	228	6 injured	4
1921	9	2	16	7,446 k.p.	400	216	7 injured	4
1922	8	2	24	8,154 k.p.	452	169	2 killed, 7 injured	4
1923	7	2	24	12,996 k.p.	503	230	1 killed, 25 injured	3
1924	?	?	?	?	?	?	?	?
1925	22	12	29	6,648 k.p.	1,503	112	1 killed, 22 injured	1
1926	28	15	34	11,488 k.p.; 4,200 p.d.; 151,125 p.p.	1,039	230	4 killed, 137 injured	1
1927	23	15	35	7,610 k.p.; 174,375 p.d.	1,074	234	2 killed, 118 injured	1
1928	32	17	27	1,170 k.p.; 162,875 p.p.	1,042	176	?	?
1929	?	?	?	?	?	?	?	?
1930	32	17	12	160 k.p.; 144,150 p.p.	1,035	148	2 killed	2
1931	31	17	10+	29 k.p.; 139,000 p.p.	1,011	125	?	?
1932	31	17	12	13 k.p.; 109,200 p.p.	1,768	100	?	?
1933	31	17	18	43 k.p.; 165,175 p.p.	1,714	174	?	?
1934	31	18	18	180 k.p.; 13,175 p.p.p.; 137,050 p.p.	1,581	180	5 killed	5
1935	33	18	20	31,975 p.p.p.; 135,775 p.p.	1,510	191	1 killed	1
1936	33	18	17	37,050 p.p.p.; 160,100 p.p.	1,420	207	1 killed	1
1937	31	26	3	73,900 p.p.p.; 128,200 p.p.	1,326	201	2 killed	2
1938	32	26	0	83,525 p.p.p.; 63,125 p.p.	1,302	116	?	?
1939	31	26	0	148,275 p.p.	1,195	154	1 killed	1
1940	31	26	0	155,550 p.p.	1,057	153	?	?
1941	28	26	3	168,600 p.p.	1,049	157	1 killed	1
1942	26	25	3	184,900 p.p.	944	186	?	?
1943	27	25	3	282,700 p.p.	967	269	?	?
1944	27	25	3	297,600 p.p.	920	262	?	?
1945	24	25	3	302,350 p.p.	689	274	4 killed	?
1946	26	25	3	270,550 p.p.	704	227	1 killed	1
1947	26	25	3	89,425 p.p.	713	76	?	?

*k.p.=kegs of black powder
p.p.=pounds of permissible explosives

p.d.=pounds of dynamite
p.p.p.=pounds of pellet powder

Previously Reported Sites: None

Previous Surveys: No previous archaeological surveys are known to have been done at the mine site. However, a survey of the site was conducted by personnel from IDNR's Division of Abandoned Mined Lands (AML) and Cultural Resource Management Program prior to the one described in this ASSR.

Regional Archaeologist Contacted: None

Investigation Techniques: A pedestrian survey was conducted over the area covered by the mine's surface building complex. The resources identified were documented through photographs (35mm color film) and scaled line drawings. Documentary research on the mine site was conducted at the Danville Public Library, Georgetown Public Library, Westville Historical Museum, Vermilion County Courthouse, Illinois State Archives, and the Illinois State Library. In addition, Bunsenville residents Troy Pate, Delores Rice, and Craig Weaver were interviewed regarding the history of the mine and its associated housing. Thanks also are owed to Barney Blick for allowing us access to the Westville Historical Museum and his insights on coal mining around Westville.

Time Expended: 15.5 man hours (in field)

Sites/Features Found: The survey identified multiple sets of building foundations, a number of piers/footings, and several landscape features associated with the Bunseville Mine. There are no extant buildings left at the site. Building remains have been assigned feature numbers, whereas the piers/footings have not. See Figure 27 for a site plan.

Feature 1 is a series of concrete foundations and piers that represent the remains of the tipple complex at the mine. The superstructure of the tipple was of steel-frame construction and was comprised of a hoist shaft and a series of shakers that sorted coal by size. After being sorted, the coal was fed through hoppers into rail cars for shipment. When the mine was dismantled, the mechanicals within the tipple were removed and its steel structure was salvaged down to its foundations. Pictures of the Feature 1 have been attached as Figures 28 and 29.

Feature 2 is the combination power and engine house for the mine. This building was a large, front-gabled, brick structure, which measured 63'-2" (north/south) by 50'-0" (east/west). It was one of the key buildings at the mine and is documented in several historic photographs (see Figure 30). Like most of the other structures at the site, the engine/power house has been demolished down to its concrete foundations. The north half of the building served as the hoist room and housed the engine that powered the cage in the main shaft. The engine has been removed, but the mountings for it are still evident on the floor. The south half of the building served as a powerhouse, or substation, generating electrical power for the mine. A basement extends beneath most of the building, but this area was filled with water at the time of the field investigation, making it inaccessible. We have very little evidence of the exact workings of the powerhouse,

other than it being steam generated, since the equipment has all been removed. However, one or more steam turbines likely were present, and these would have powered electrical generators. Pictures of Feature 2 are attached as Figures 31 and 32.

Feature 3 is the remnants of the mine's large brick bathhouse. This building has been razed down to grade and its remains partially covered with debris, so it was not easily documented with scaled line drawings and photographs in the field. However, the interior and exterior of the building is documented through several historic photographs (see Figure 33), and the 1947 mine map illustrates its footprint. The bathhouse originally measured about 30'x90' in size, but at a later date an identical addition was constructed immediately west of the original structure, and the two buildings were connected by a wing that housed the shower room (DMM 1947b). Both sections of the bathhouse had gable roofs with monitors (for ventilation) running down their long axis.

Feature 4 is the remains of a large fan house, measuring 32'-6" (north/south) by 33'-0" (east/west) at its greatest extent. When the Bunsenville Mine was first opened, this building housed a steam-powered Jeffrey-model fan (see Figure 36), which was 12' in diameter, was reversible, and made ninety revolutions per minute. With a capacity of 150,000 cubic feet, this fan was the most powerful then in use in Vermilion County ca. 1920 (DMM 1919:76-77). The engine powering the fan was mounted in one section of the building, while the fan was positioned over a pit in a separate room, located on a lower level, to the south. The engine room section of the building had 6"-thick, reinforced concrete walls, while the fan room proper appears to have had frame walls. Access to the engine room could be gained via a flight of stairs on the north side of the building, while the fan room could be accessed at grade through doorways on the east and west. The 1947 mine map suggests that the eastern end of the fan house may have served as a pump room; this was difficult to assess in the field, however, due to the considerable debris covering the fan house. The eastern end of the building does have a basement (see Figures 34, 35, and 37).

Feature 5 is remains of the mine office. This L-shaped, brick building was oriented north/south and was positioned adjacent to the entrance to the mine site. The main block of the office measured 30'-0" (north/south) by 18'-8" (east/west) and had a full basement beneath it. When the building was demolished, much of the resulting debris was dumped into the basement. Two doorways were located on the east side of the main block, which suggests that the interior may have been divided into two rooms. The exterior steps leading to these doorways remain in place. The rear wing of the office measured approximately 14'-4" (north/south) by 9'-8" and was divided into two small rooms with separate access to the main block. It is possible that these small chambers may have functioned as bathrooms, but there is insufficient evidence of plumbing to positively indicate this use (see Figures 38 and 39).

Feature 6 is the foundations of a garage measuring 12'-1" (north/south) by 12'-6" (east/west). Now razed down to its concrete foundations, the garage appears to have been of frame construction (based on the presence of sill bolts), and the 1947 mine map indicates that it had steel siding (see Figure 39).

Feature 7 is the base and footings of the steel water tower that formerly was located at the mine. The water tower appears in the background of one historic photograph of the mine tipple. It appears to have been similar to one built by the Bunsen Coal Company at one of their mines in Westville; if so, the tower had a round shaft and an octagonal monitor (serving as a pump room?) at its top, which could be approached by way of an exterior stairway. The shaft of the water tower sat on a base, which measures nearly 8' square and has a well pit. Large footings are located off the corners of the base (see Figure 40).

Feature 8 is a pump house located near the water tower. This building originally had 8" brick walls, but these have been demolished down to the concrete foundations, which measure 13'-6" (north/south) by 17'-7" (east/west) on their exterior. A large concrete mounting, presumably intended for a pump, is located on the interior of the building. Passageways for pipes are located beneath the concrete floor (see Figure 41).

Feature 9 is the foundation remains of a large brick building located south of the stable. This building appears on the abandoned mine map for the Bunsenville Mine but is not identified, which is surprising given its large size. The main block of the structure measures 39'-8" square and is divided in half by an interior brick wall running east/west. A small wing, believed to be a bathroom (based on the plumbing present), extends off the west end of the building. A concrete pad, meant for an entrance porch or stoop, is located on the east side of the building (see Figures 42 and 43).

Feature 10 represents the remains of a stable measuring 35'-5" (north/south) by 46'-4" (east/west). The stable had brick walls and concrete foundations and was divided into three aisles on its interior. The central aisle measured 12' wide and had a wide doorway (probably holding paired doors) at its east end. The north aisle measured 11' wide and was separated from the central aisle by a concrete wall along part of it. In contrast, the south aisle, which also was 11' wide, had no masonry wall dividing it from the central aisle. It is possible that the aisle on the north was used for storage, while the south aisle was divided into stalls for mules. The foundations of small frame structure (3'-6"x3'-8") are located off the northwest corner of the stable. This structure may have functioned as a manhole or valve house. Both it and the stable have been razed to their foundations (see Figures 44 and 45).

Feature 11 served as a combination office/storeroom/hospital for the mine. The original section of this building was built of brick and measured approximately 80' (north/south) by 18' (east/west). A frame addition later was added to the rear (west) side (DMM 1947b). The demolition of this building was quite thorough, and the very little is known about its interior layout (see Figure 45 and 46)

Feature 12 is the foundations for a scale house and pit, located directly east of Feature 11. A small percentage of the Bunsenville Mine's coal was sold to local retailers and consumers, and trucks would weight out here before leaving the mine. The scale pit has 10'-thick concrete foundations and measures 32'-2" (north/south) by 10'-6" on its exterior. Concrete ramps extend off the north and south ends of the pit. The foundations

for a frame scale house, measuring 6'-2" (north/south) by 8'-0" (east/west), are centered along the west side of the scale pit (see Figure 46).

Feature 13 is positioned directly behind Feature 11 and is identified on the 1947 mine map as an oil house. It presumably was used to store fuel or heating oil. The building measures 22'-0" (north/south) by 20'-0" (east/west), has concrete foundations, and originally had brick walls. A 6'-2"-wide concrete pad extends across the north side of the building, which suggests that it was entered on this side. A frame addition, with concrete foundations, was added along the west side of the oil house at some point (see Figure 46).

Feature 14 is a concrete foundation measuring 20' (north/south) by 36' (east/west), which formerly supported a building identified on the 1947 mine map as a "cement house." The building had frame walls and steel siding. It is assumed that the structure was used to store (or mix?) concrete used in and around the mine.

Feature 15 is the concrete foundations to a water softener. This odd shaped structure measures 57'-6" long (east/west) and is narrow and rectangular for most of its extent but has an octagonal chamber on its east. On the interior, the foundations are divided into three chambers. The presence of sawn-off 1"-square bars, spaced 7'-4" on-center, on the top of the foundations suggests that part of the softener's superstructure was of steel-frame construction. The specific utility of having a large water softener at the mine is not understood, though it may have been necessary to soften the water being used by the boilers in order to reduce buildup on pipes and valves (see Figures 47 and 48).

Feature 16 is the remains of a building the 1947 mine map identifies as a "sand drier" (DMM 1947). The building was of concrete construction and measured 19'-8" (north/south) by 40' (east/west) on the exterior. A separate set of foundations, measuring approximately 10'x10' are located on the interior of the building. Narrow-gauge rails, set vertically, and steel cable were encased within the concrete walls, presumably for reinforcement. The exact purpose of a sand drier had not been determined (see Figure 48).

Feature 17 is the remains of a powder house. This building was a front-gabled structure, measuring 25' (north/south) by 18' (east/west), and had raised concrete foundations and walls and roof of reinforced concrete. A doorway was positioned in both gable-end walls of the structure. The powder house has been demolished down to its foundations, though fragments remain sufficiently intact for its elevation to be deciphered (see Figures 49 through 51). Understandably, the building was positioned at the western end of the mine site in order to minimize the damage in the event of an explosion. A railroad spur ran along the south side of the powder house, allowing the direct unloading of explosives from the rail cars into the building. Coal reports indicate that a variety of explosives were used at the mine during its history, starting with black powder, then dynamite and pellet powder, and finally permissible explosives.⁵

⁵ "Permissible explosive" is an industry term. Explosives of this type were standardized, and they provided a more directed and controlled blast than those preceding them chronologically (i.e. black powder, dynamite, and pellet powder).

Known Buildings not Documented in the Field:

Several buildings that are documented in the historical record were not recorded in the field due to the extent of their destruction. These included the check houses, boiler house, blacksmith shop, car repair shop, and an electrical substation.

The foundations of several small valve houses also were observed at the site; though photographed, they were not assigned feature numbers. The valves in these buildings controlled the extensive system of the water and steam pipes that extended between the buildings at the site. Each had a subterranean chamber that provided access to the piping (see Figure 52).

Landscape Features

The most significant landscape feature at the site is the large gob pile, which covers an estimated 16 acres and borders the east side of the surface complex. This pile, which represents the accumulation of three-decades-worth of waste material (soil, shale, stone, etc.), serves not only as the most visible landmark of the Bunsenville mine, but also is a testament to the mine's size and longevity (see Figure 53). In addition, the locations of the railroad spurs that once serviced the mine are still visible on the landscape. Railroad ties are exposed at different points at the site (The rails were removed when the mine was dismantled).

Mine-Related Housing:

A limited documentation of the company-owned housing associated with the Bunsenville Mine and with the town of Bunsenville was conducted during the survey. None of this housing will be impacted by the proposed reclamation project.

As discussed above, the U. S. Fuel Company constructed a small residential development, located immediately southwest of the mine site, whose housing was reserved for the managerial staff employed at the mine. The development originally was comprised of eight two-story, frame dwellings, arranged four-to-a-side along the same street. Five of these houses are still extant (see Figures 54 and 55). There were four different housing types, whose size, interior finishes, and placement reflected the corporate/social hierarchy at the mine. The superintendent and assistant superintendent of the mine occupied the largest houses, which were T-shaped, side-gabled dwellings and were located opposite one another at the west end of the street, farthest away from the mine entrance. The main block of these dwellings resembled an I-house, being two-rooms wide and one-room deep, while the rear wing was a full two-stories in height. Both had a full-length front porch and provided approximately 1,472 square feet of living space. Only one of the superintendents' houses is still standing (see Figure 56). Next in line were two L-shaped houses intended for the mine managers. The main block of these manager's houses resembled those occupied by the superintendent and assistant superintendent but had smaller front porches and single-story rear wings. One house is

still extant. They contained approximately 1,248 square feet of living space (see Figure 57). The next two houses on the street were three-bay, single-pile structures nearly identical to the two west of them, but having one central chimney rather than two gable-end chimneys—an orientation that also allowed for more windows on the gable ends. Mine managers reportedly occupied these residences as well (a total of four managers were employed at the mine) (see Figure 57). The last two dwellings in U. S. Fuel's residential development were double-houses and were reserved for foremen. Since they contained two units, the foremen's houses were double-pile (two rooms deep) and had two interior chimneys. Each dwelling was approximately 1,788 square feet in size, allowing 896 square feet per unit, and had full-length front porches. Both of the double houses occupied by the foremen are still extant (see Figure 58). Aside from the difference in living space, the social hierarchy of the mine also expressed through the interior finishes in the houses. The superintendent and assistant superintendent's houses were the only ones supplied with interior bathrooms. They also had the finest trimwork and mantle pieces, and the quality of these materials diminished slightly in each successive house type, moving down the chain of command (Delores Rice, pers. comm., 26 February 2002).

There are a number of houses in Bunsenville that date from the period that the mine was in operation. These homes are smaller than those occupied by the managerial staff. Except for one dwelling (which originally was two stories but has been reduced to one), all of the houses in town were single story and were frame. They range in character from diminutive gabled cottages to pyramidal-hip-roofed cottages and more fashionable Craftsman-inspired bungalows (see Figures 59 through 61).

Cultural Material: None collected

Collection Technique: The field investigation was aimed at the documentation of building remains, rather than the collection of artifacts.

Curated at: Fever River Research, Springfield (short-term)
Illinois State Museum, Springfield (long-term)

Area Surveyed (acres and square meters): approximately 13.2 acres (51,840 square meters)

RESULTS OF INVESTIGATIONS AND RECOMMENDATIONS

- Phase I archaeological reconnaissance has located no archaeological material [in this portion of the site]; project clearance is recommended.
- Phase I archaeological reconnaissance has located archaeological materials; site(s) does(do) not meet requirements for National Register eligibility; project clearance is recommended.
- Phase I archaeological reconnaissance has located archaeological materials; site(s) may meet requirements for National Register eligibility; further testing is recommended.

- Phase II archaeological investigation has indicated that site(s) does(do) not meet requirements for National Register eligibility; project clearance is recommended.
- Phase II archaeological investigation has indicated that site(s) meet requirements for National Register eligibility; formal report is pending and a determination of eligibility is recommended.

Comments: The Phase II archaeological survey of the Bunsenville Mine Site resulted in the documentation of a large, early-to-middle-twentieth coal mine, which at one point was the largest shipping mine in Vermilion County and one of the largest in the state of Illinois. The Bunsenville Mine had a more extensive surface complex than most other mines, both in respect to the size and number of its buildings; hence, the field investigation presented an opportunity to gather structural data on buildings and structures generally present at shipping mines (i.e. tipple, bathhouse, fan house, powder house etc.) that can be utilized for comparative purposes, in addition to recording several new building types not documented in previous surveys (i.e. hospital, water softener, sand drier, etc.). Even though the buildings at the mine site have been razed to their foundations, we obtained considerable structural data and a good comprehension of the different activity areas within the surface complex. The archival research also yielded a great deal of the information on the Bunsenville Mine, which allows us to better understand those sections of the site which were more heavily impacted by building demolition and were not readily interpretable in the field (i.e. the area around the boiler house, blacksmith shop, and repair shop). Future research might concentrate on more fully documenting the company housing associated with the mine site and the worker housing in Bunsenville. These dwellings are intimately linked to the history of the mine and contribute toward the interpretation of that resource.

Surveyors: C. Stratton

Survey Date: February 25 and April 1, 2002

Report Completed By: C. Stratton and F. Mansberger
Fever River Research
P. O. Box 5234
Springfield, IL 62705

REFERENCES CITED

Beckwith, H. W.

1879 *History of Vermilion County*. H. H. Hill and Company, Chicago/

Brinkley, Alan

1995 *The End of Reform: New Deal Liberalism in Recession and War*. Vintage Books, New York, NY.

Boudinot, E. S.

1907 *Atlas of Vermilion County, Illinois*. E. S. Boudinot, Danville, IL.

Cartlidge, Oscar

1933 *Fifty years of Coal Mining*. Oregon City Enterprise.

Department of Mines and Minerals (DMM)

Annual Coal Report. Department of Mine and Minerals, Springfield, IL.
Multiple years cited, 1909 to 1947.

1947b Map of the Bunsenville Mine, Sheet 18 of 22, Abandoned Mine Maps, Record Group 245.004, Illinois State Archives, Springfield.

Danville Commercial-News

1947 Big Mine Finishes Loading; To Close. *Danville Commercial-News*, 24 April. Danville, IL.

1947 Bunsenville Mining Prospects Very Dark. *Danville Commercial-News*, 11 June. Danville, IL.

1947 Efforts Being Made to Keep Shaft Working. *Danville Commercial-News*, 27 April. Danville, IL.

1947 Operation of Mine Depends on Sale. *Danville Commercial-News*, 25 April. Danville, IL.

1947 Shutdown of County's Largest Pit Ordered by Pittsburgh Owners. *Danville Commercial-News*, 22 April. Danville, IL.

Division of Abandoned Mined Lands (AML)

[2001] Environmental Narrative, U. S. Fuel Co. Bunsenville Mine 2001 Grant Project.

Drury, John

1954 *This is Vermilion County, Illinois*. The Loree Company, Chicago, IL.

- Hackman, W. H.
 1935 Miners, Hit by Depression, Eking Out a Living in "Hoover Hollow." *Danville Commercial-News*, 27 October. Danville, IL.
- Jacobson, Russell J. and Lawrence E. Bengal
 1981 *Strippable Coal Resources of Illinois. Part 7: Vermilion and Edgar Counties*. Circular No. 521. Illinois State Geological Survey, Champaign, IL.
- Illinois State Geological Survey
 2000 *Directory of Coal Mines in Illinois: Vermilion County*. Illinois State Geological Survey, Champaign, IL.
- Ogle, George A. and Company
 1915 *Standard Atlas of Vermilion County, Illinois*. George A. Ogle and Company, Chicago, IL.
- Quaife, Milo M.
 1968 *Chicago's Highways Old and News, from Indian Trail to Motor Road*. University Microfilms, Ann Arbor, MI.
- Sanborn Map Company
 1909a *[Map of] Georgetown, Illinois*. Sanborn Map Company, New York.
 1909b *[Map of] Westville, Illinois*. Sanborn Map Company, New York
 1915 *[Map of] Westville, Illinois*. Sanborn Map Company, New York
 1925a *[Map of] Danville, Illinois*. Sanborn Map Company, New York
 1925b *[Map of] Westville, Illinois*. Sanborn Map Company, New York
 1928 *[Map of] Catlin, Illinois*. Sanborn Map Company, New York.
 1927 *[Map of] Georgetown, Illinois*. Sanborn Map Company, New York.
 1928 *[Map of] Catlin, Illinois*. Sanborn Map Company, New York.
- Sidwell Studio
 1966 *Atlas of Vermilion County, Illinois*. Sidwell Studio, Lombard, IL.
- Stark, Mary E. and Donald L. Brown
 1977 *Paths from the Past: Georgetown Illinois Sesquicentennial, 1827-1977*. Printing Techniques, Inc., Danville, IL.
- United States Geological Survey (USGS)

1947 *Georgetown, Illinois Quadrangle Map*. 15 minute series. U. S. Geological Survey, Washington, D. C.

1966 *Georgetown, Illinois Quadrangle Map*. 7.5 minute series. U. S. Geological Survey, Washington, D. C.

Vermilion County

Building Records. Assessor's Office, Vermilion County Courthouse, Danville, IL.

Deed Record. Recorder's Office, Vermilion County Courthouse, Danville, IL.

Plat Record. Recorder's Office, Vermilion County Courthouse, Danville, IL.

Wells, Elizabeth

1992 A Mountain of History. *Danville Commercial-News*, 13 September 1992, Section C. Danville, IL.

Westville Historical Museum

Photograph collection. Westville, IL.

Williams, Jack Moore

1930 *History of Vermilion County, Illinois*. Volume One. Historical Publishing Company, Topeka, KS.

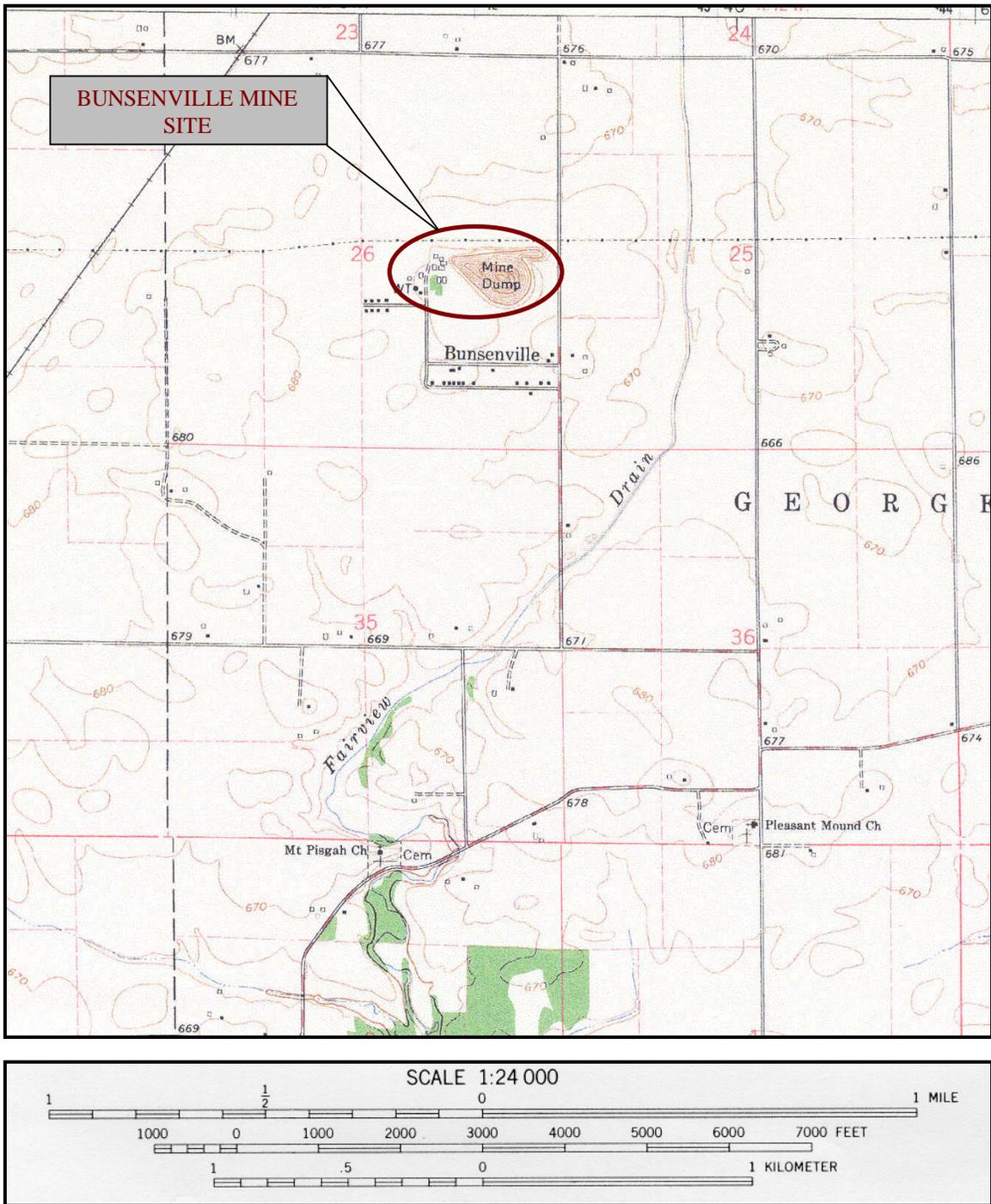


Figure 1. United States Geological Survey (USGS) topographic map showing the location of the Bunsenville Mine Site (USGS 1966).

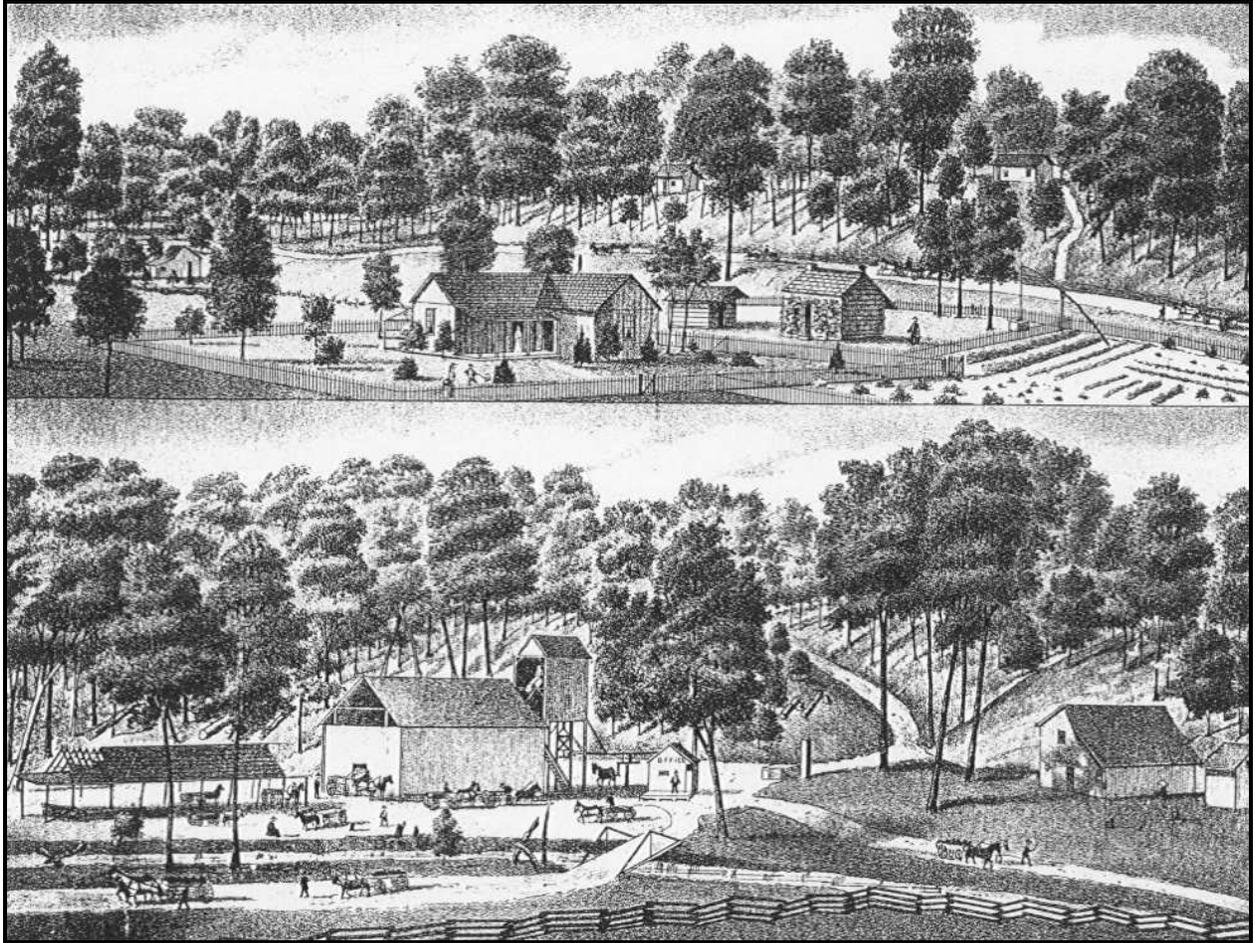


Figure 2. An 1875 lithograph showing the residence, tenant houses, and coal mine buildings located on the property of W. B. Squires in Catlin Township. The cage for this early shaft mine was raised and lowered by means of a horse-powered hoist (located the left of the office). Note the wagons hauling away coal from the mine in the lower figure (Brink and Company 1875).

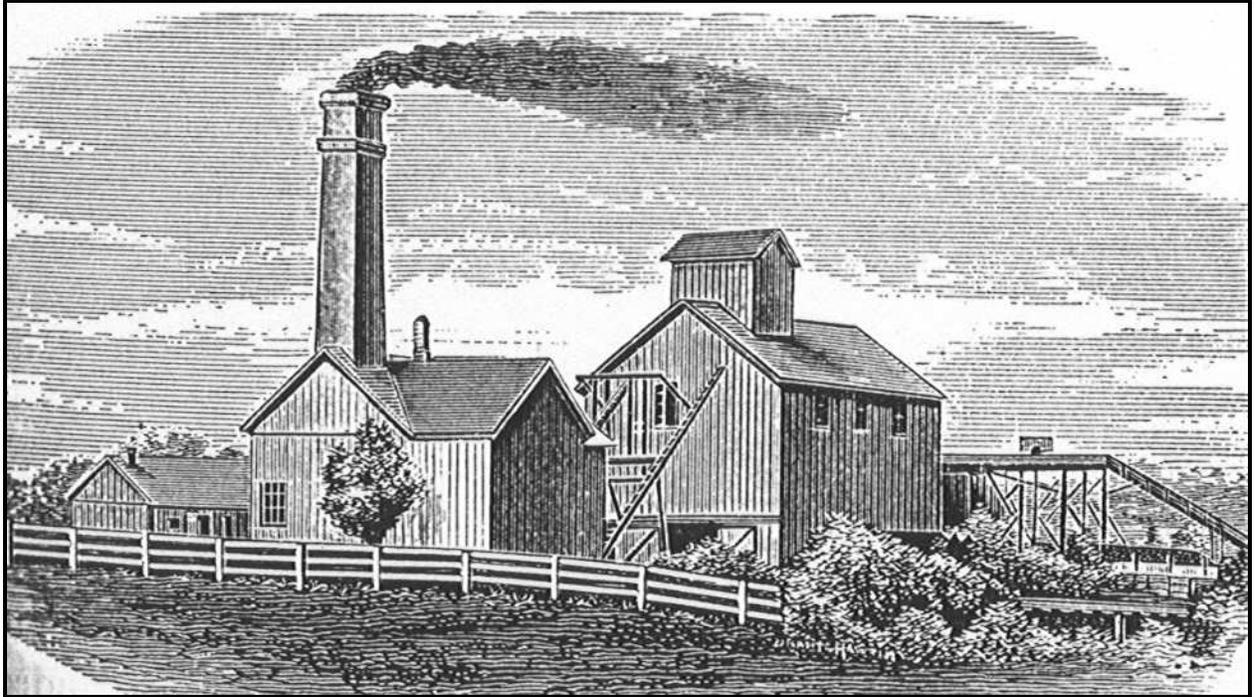


Figure 3. The Ellsworth Coal Company's mine, as illustrated in 1879. This mine was located south of the Vermilion River, near Danville, and was positioned adjacent to the Toledo, Wabash, and Western Railroad. It represents an early example of a shipping mine in Vermilion County. Although the Ellsworth Mine was small compared to later operations, its surface complex nonetheless had the essential features around which all subsequent large-scale shaft mines would be built: i.e. boiler/engine house, tibble and coal-processing structure, blacksmith shop, and typically an office (Beckwith 1879:337).

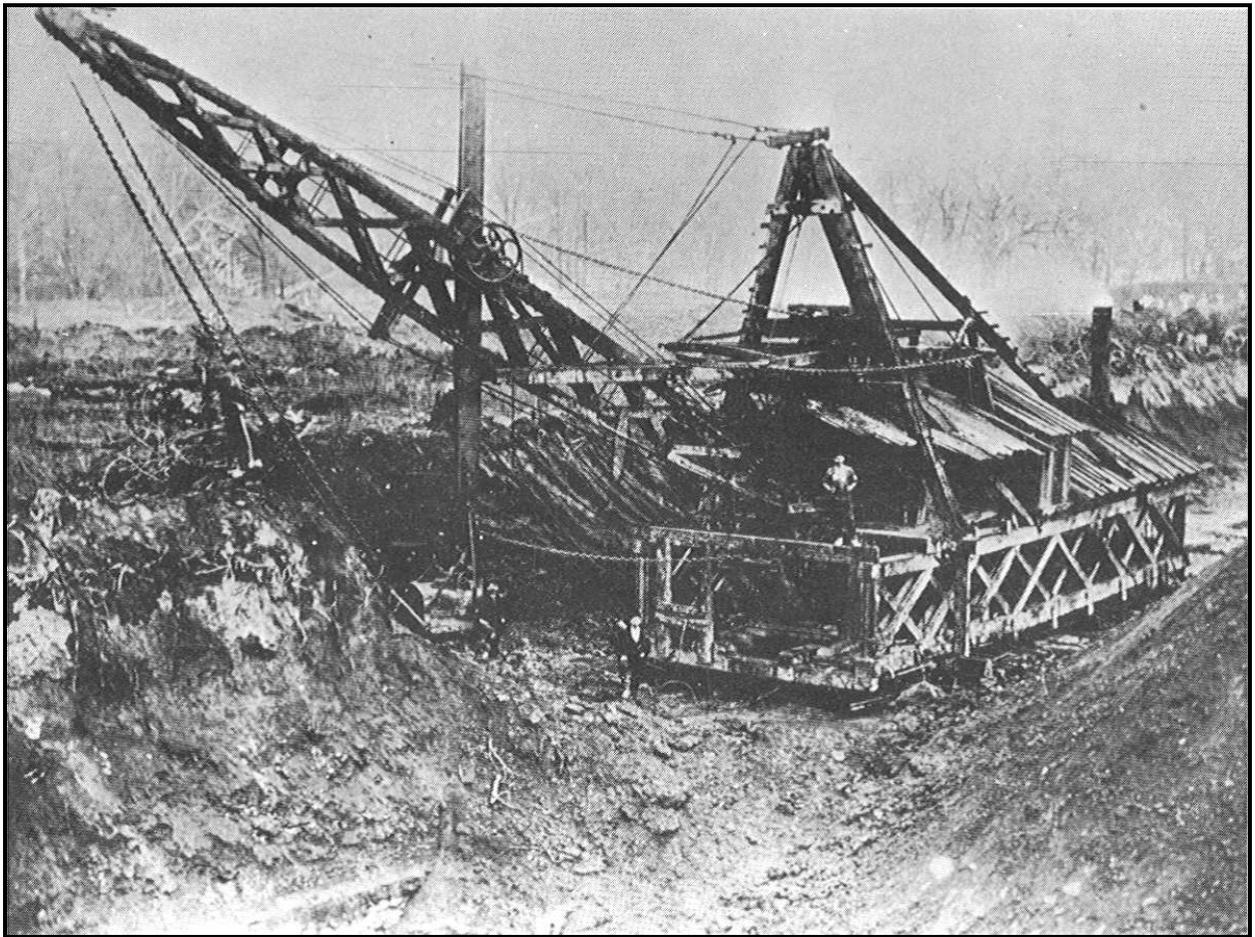


Figure 4. "Dry land dredge" developed by Wright and Williams for use at the Consolidated Coal Company's Missionfield strip mine during the late 1880s. This machine was the second type of coal stripping machine to operate in the United States (Jacobson and Bengal 1981:cover).

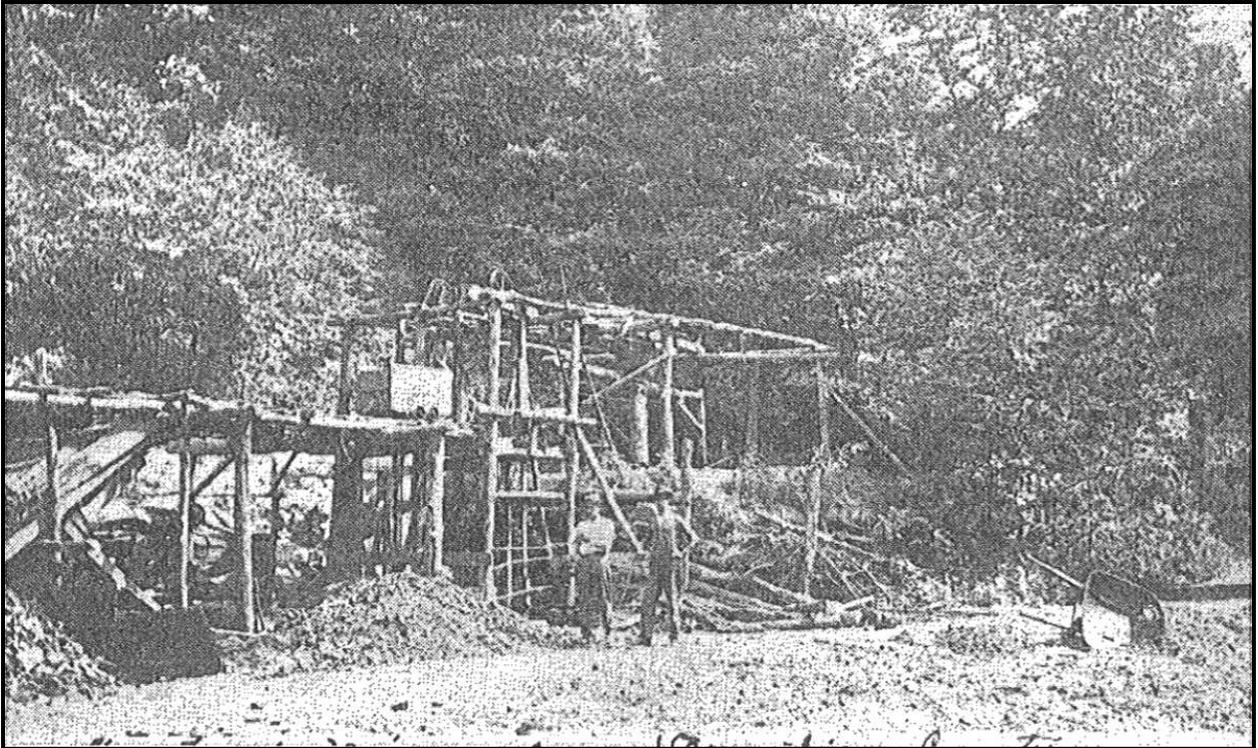


Figure 5. An unidentified local mine in operation in Vermilion County in 1910. This mine illustrates the primitive and labor-intensive conditions at certain local mines, even in the early twentieth century (DMM 1910:329).

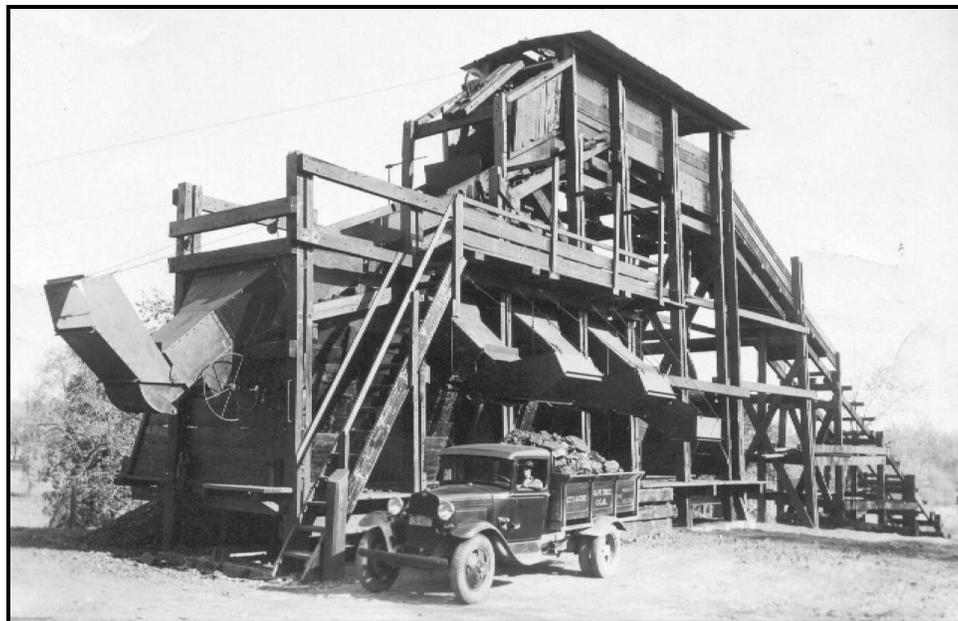
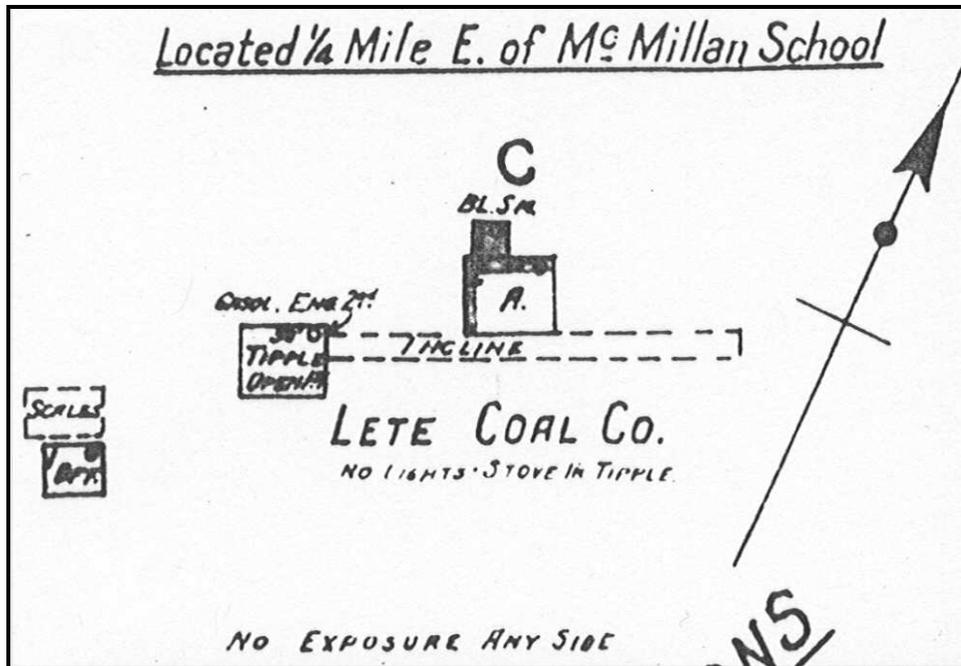


Figure 6. The Lete Coal Company, an example of a more modern, small-scale local mine. The company was based in Danville and was in business from 1925 through 1946. (TOP) The building complex associated with the coal mine, as illustrated on a 1925 Sanborn map (Sanborn Map Company 1925a). Key buildings/structures illustrated include the tipple (with incline), office and scales, and blacksmith shop. (BOTTOM) An undated photograph of the Lete Coal Company tipple, possibly taken during the late 1930s or early 1940s (Westville Historical Museum).

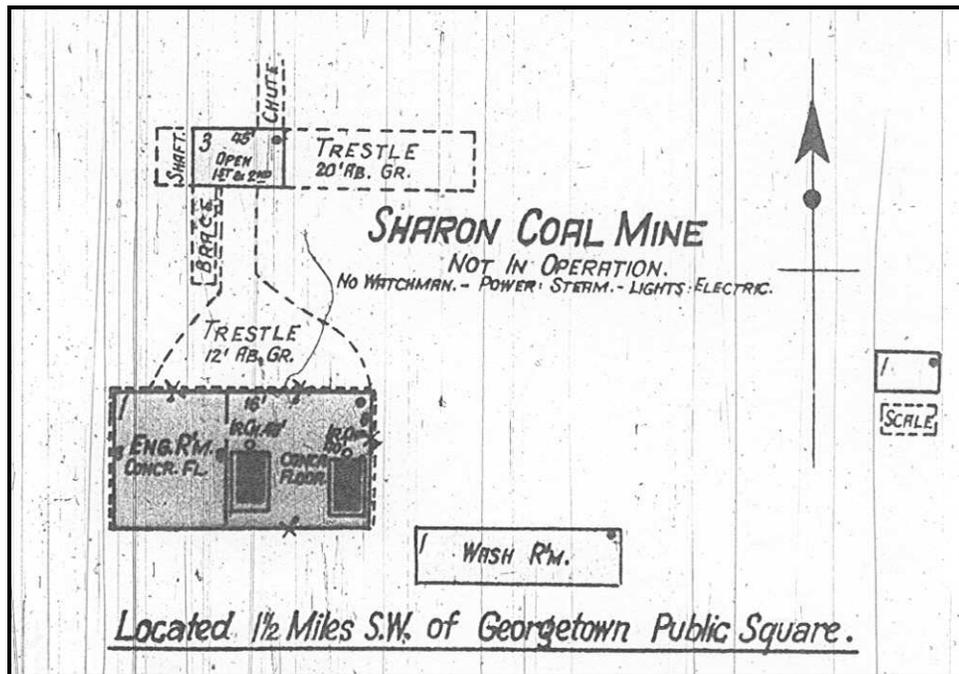
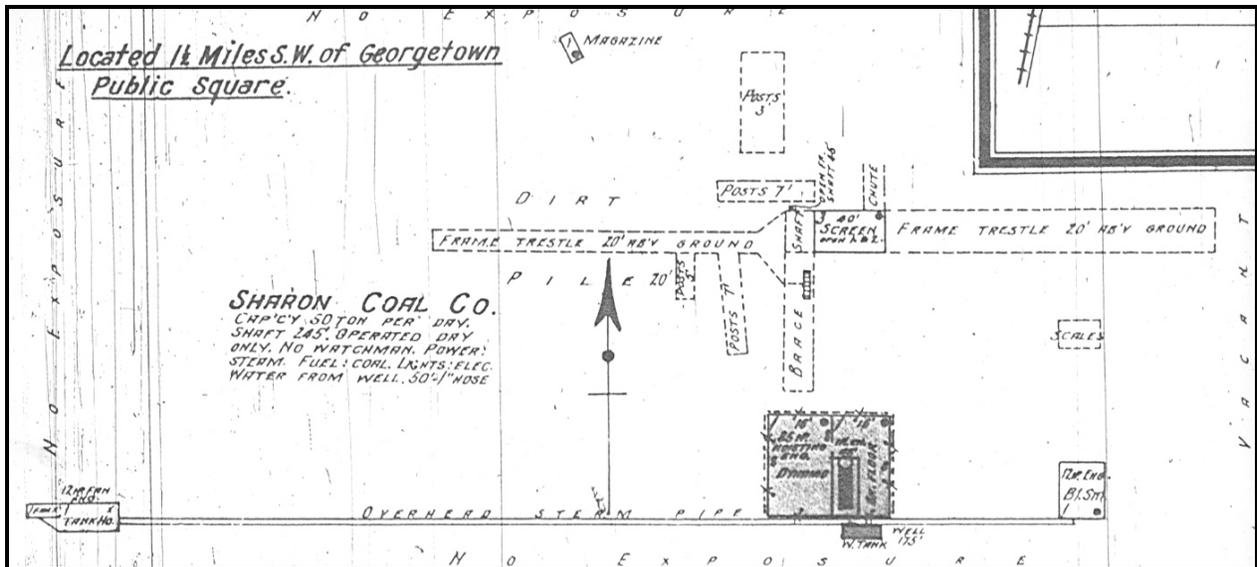


Figure 7. (TOP) Sanborn map illustrating the Sharon Coal Company in 1909. This mine was the first large mine established in the Georgetown area and was a local mine (Sanborn map Company 1909a). (BOTTOM) Sharon mine in 1927, after it had ceased operation (Sanborn Map Company 1927).

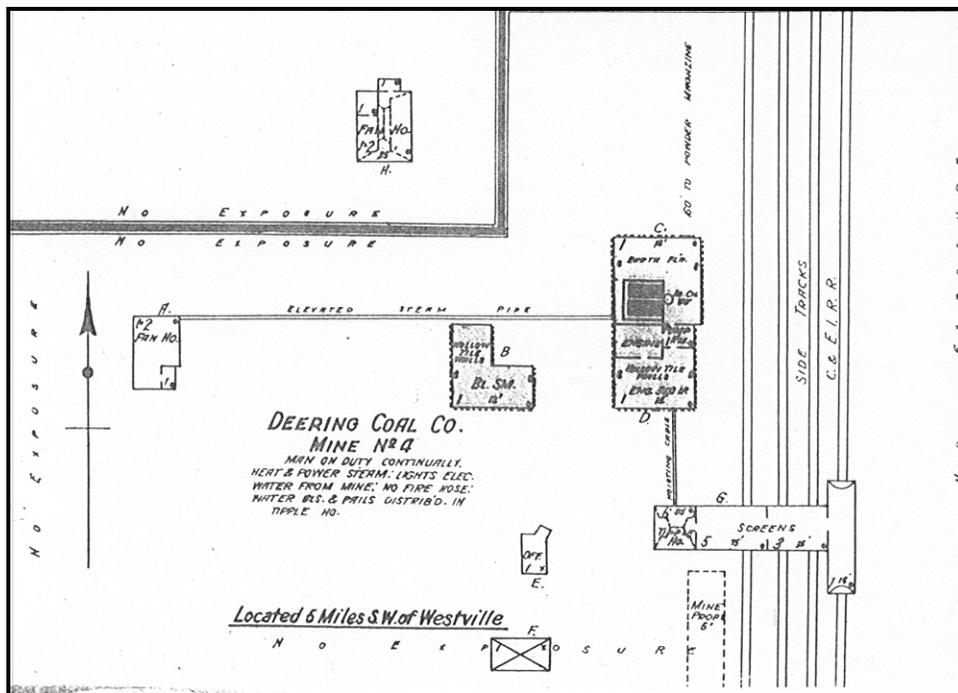
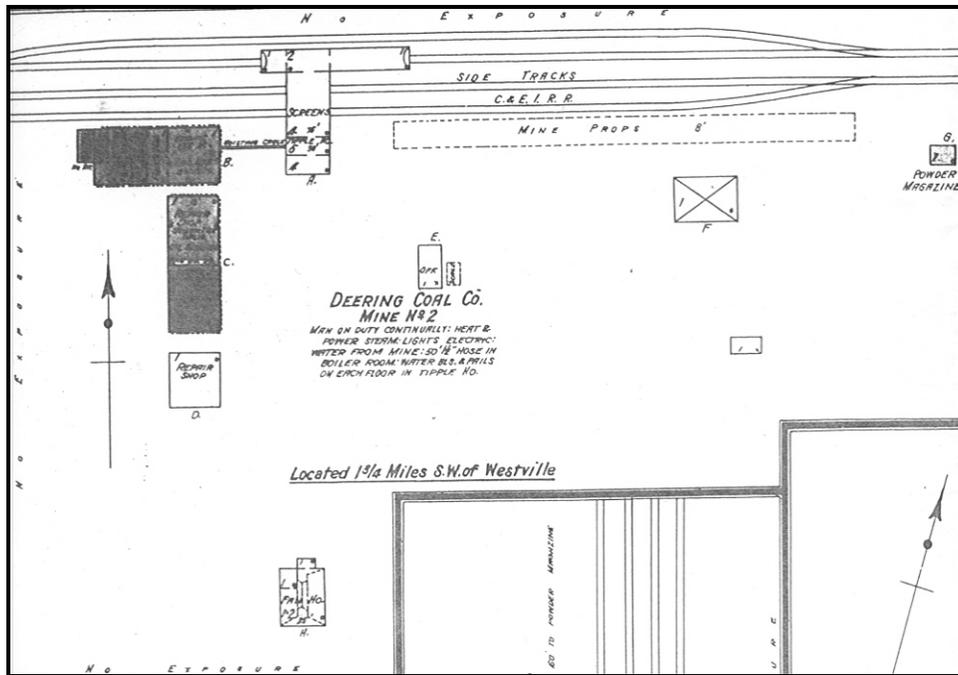


Figure 9. Sanborn maps illustrating Dering Coal Company Mine Nos. 2 and 4, which were located in vicinity of Westville. The layouts for these mines are very similar, in respect to the orientation and placement of the tipples, boiler/hoist house, blacksmith shop, and fan house. Their surface complexes also were very small and compact compared to other shipping mines (Sanborn Map Company 1909b:3).

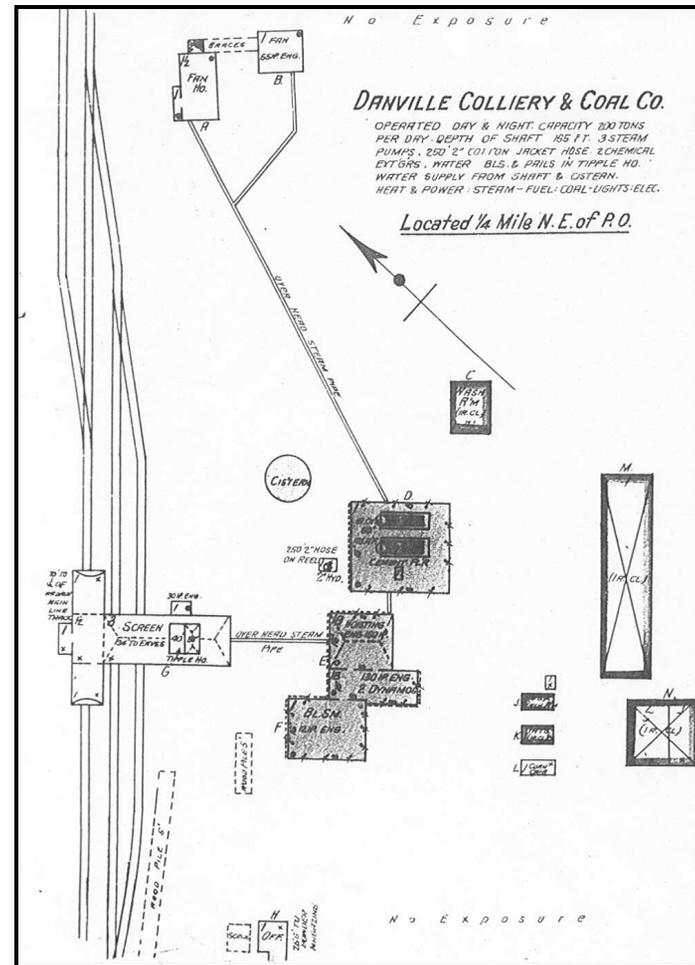
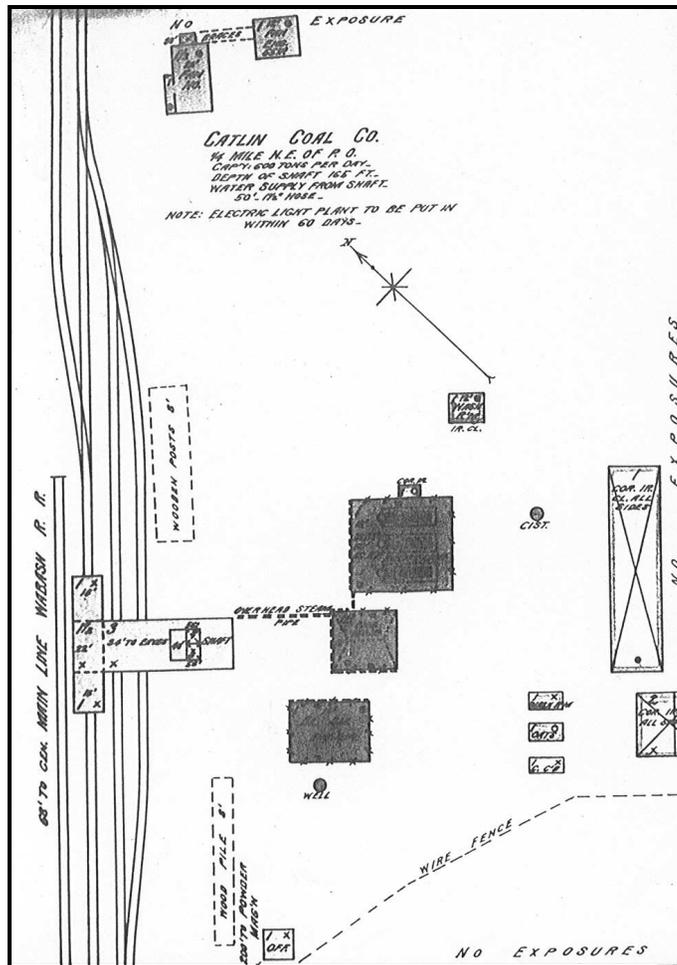


Figure 10. (LEFT) An 1899 Sanborn map of the Catlin Coal Company, a shipping mine located along the Wabash Railroad outside of Catlin, Illinois. This surface complex associated with this mine also was quite compact (Sanborn 1899). (RIGHT) The same mine in 1918, when it was operated by Danville Colliery and Coal. Despite the passage of thirty years, the facility had changed relatively little since 1899 (Sanborn 1928).

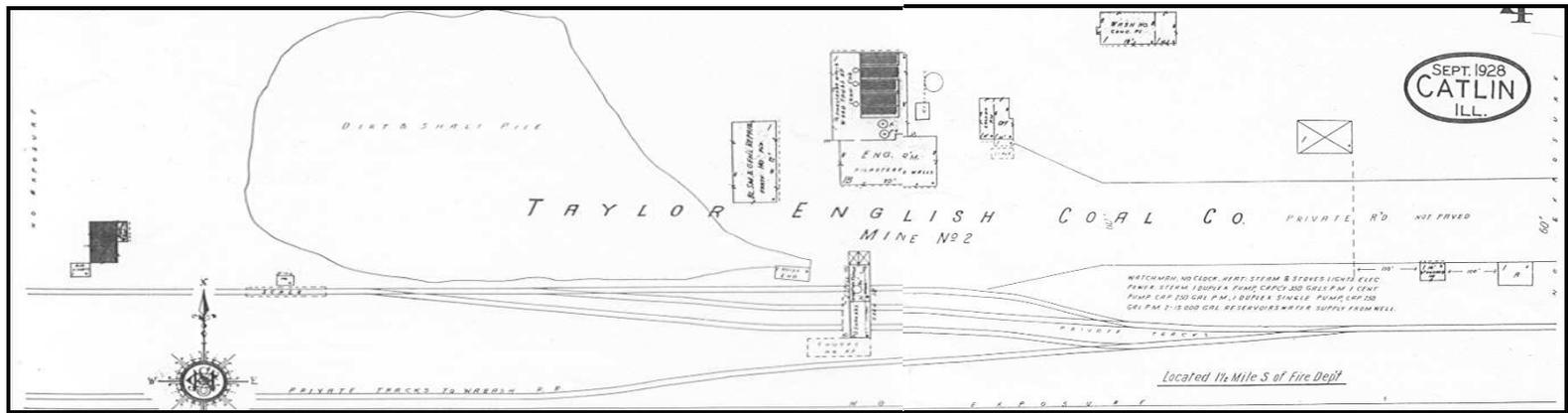


Figure 11. A 1928 Sanborn map illustrating the Taylor-English Coal Company's mine in Catlin. This shipping mine also was located along the Wabash Railroad (Sanborn 1928).

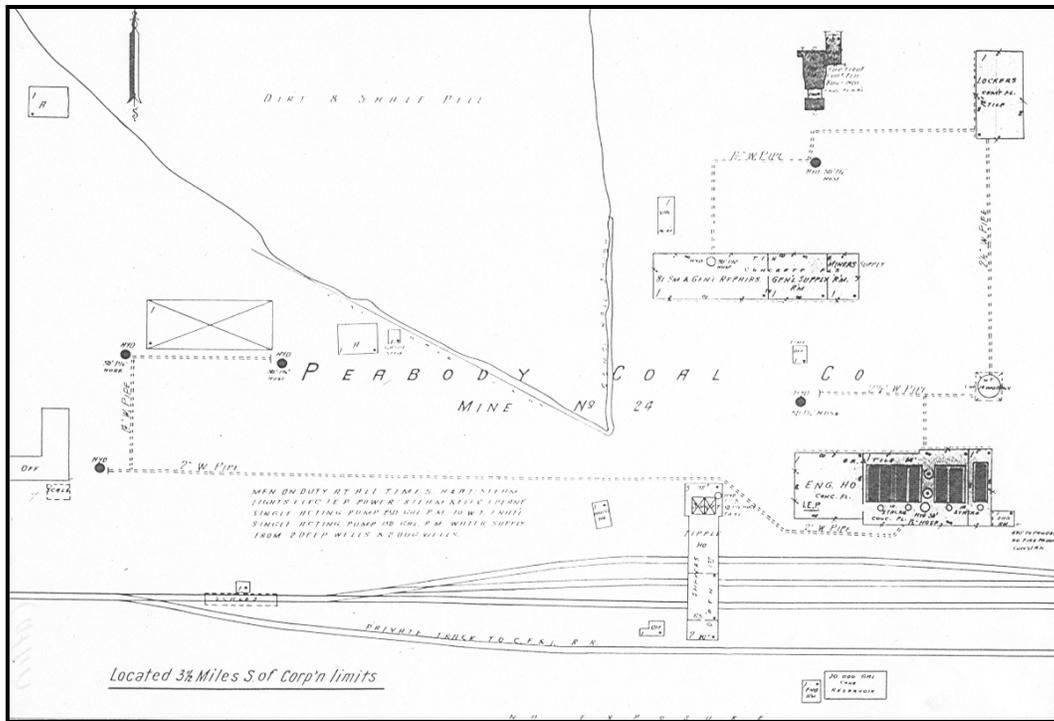


Figure 12. (TOP) A 1928 Sanborn map of the Peabody Coal Company's Mine No. 24, which was located midway between Catlin and Bunsenville. This mine was one of Vermilion County's principal shipping mines from the 1910s into the 1940s, and regularly was ranked number two, after U. S. Fuel's Bunsenville Mine. It closed in 1946, one year before the Bunsenville Mine. (BOTTOM) An undated photograph of Peabody No. 24. The tipple appears in the background (Westville Historical Museum)

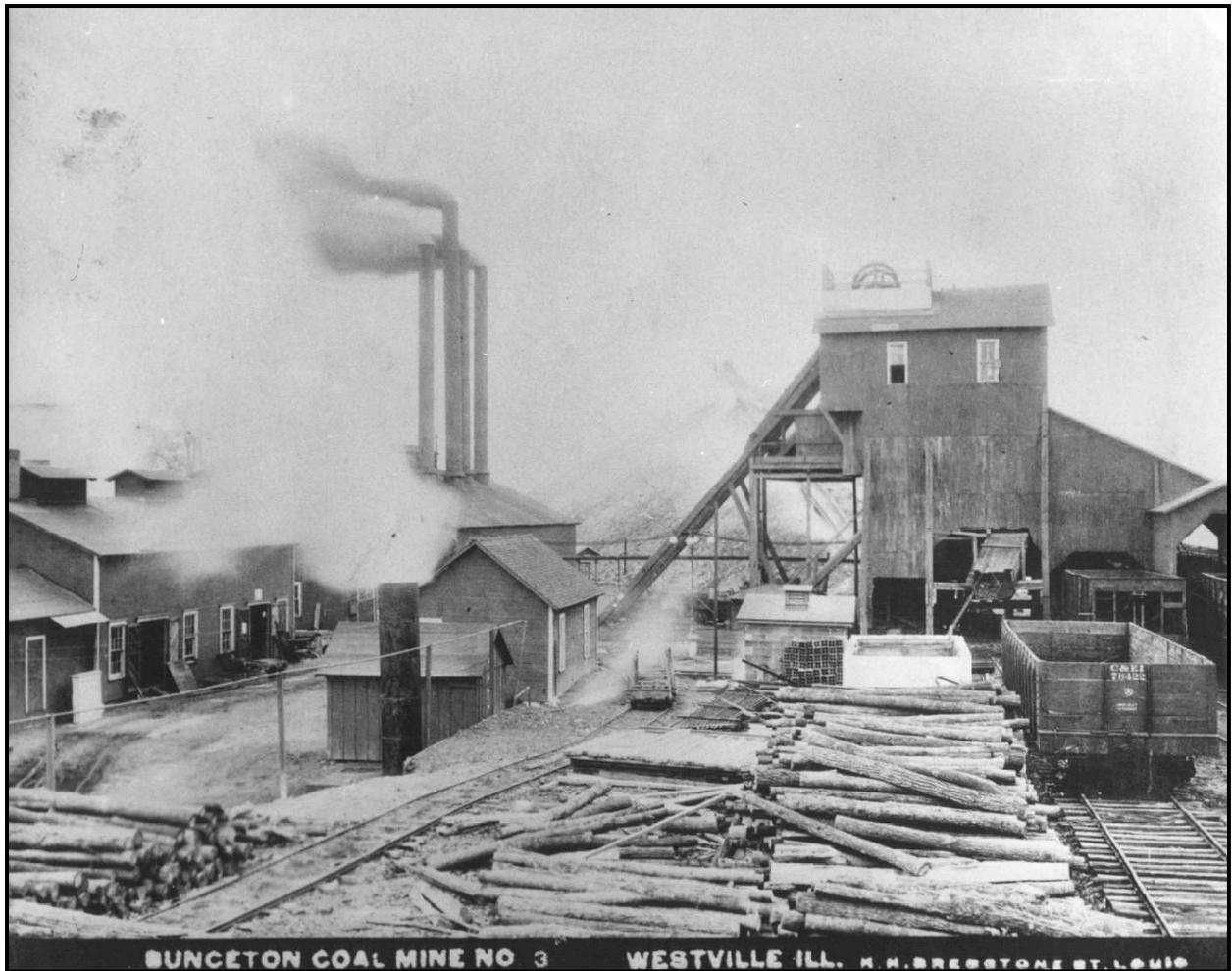


Figure 13. A photograph of Bunsen Coal Company Mine No. 3. This photograph is undated but presumably was taken during the company’s period of ownership (1909—1916). The photographer has misidentified the company’s name as “Bunceton.” The surface complex for this mine was completely rebuilt by the Bunsen Coal Company after their acquisition of the property. Note the preponderance of frame buildings at the mine, which contrasts with complex developed by U. S. Fuel at Bunsenville. Also of interest are the stacks of logs, which were used to timber up the mine passageways, and the coal rail cars (Westville Historical Museum).

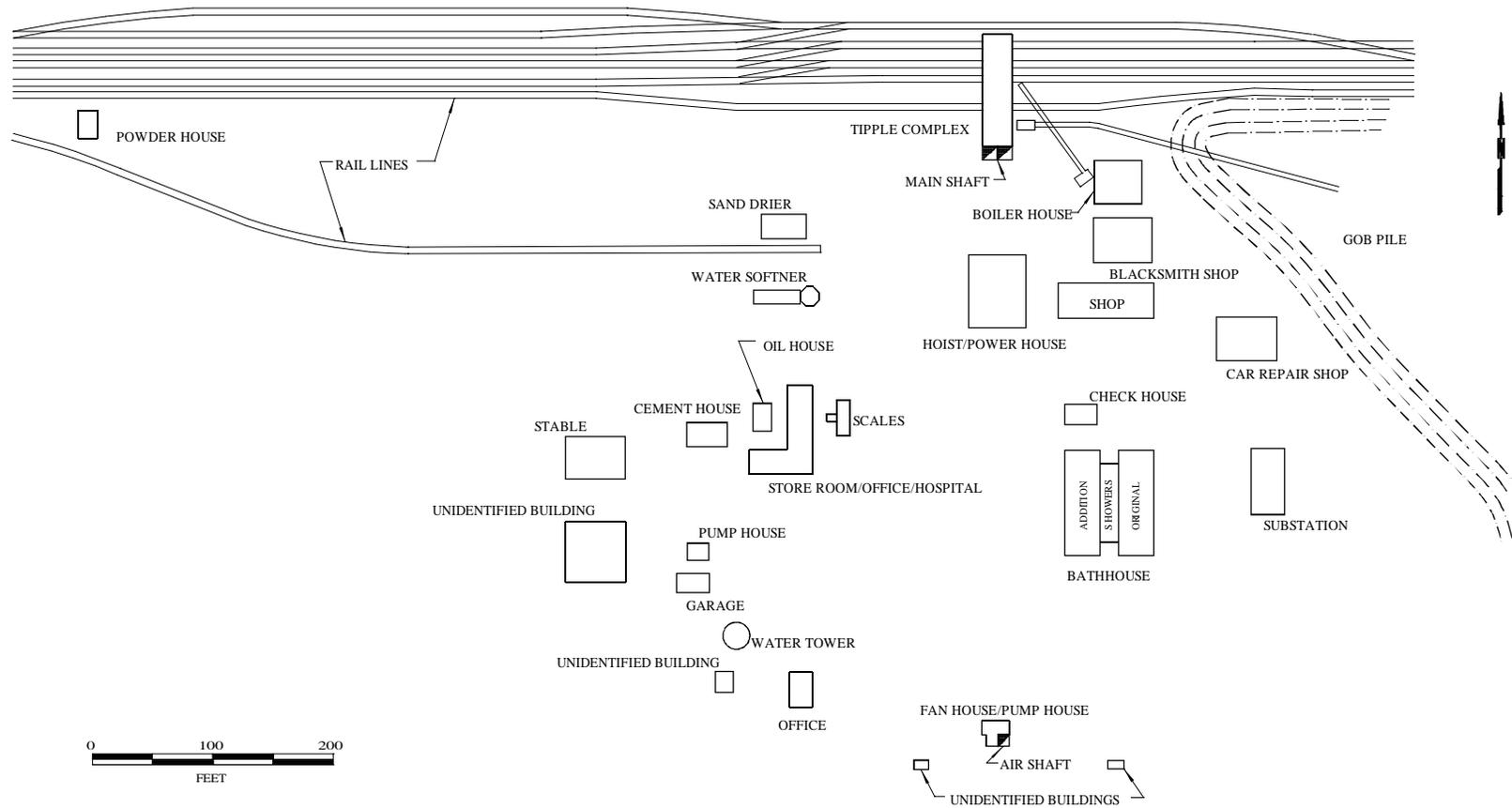


Figure 17. Site plan based on the previous figure, showing only the surface improvements at the mine.



Figure 18. A photograph of the Bunsenville Mine, taken during the early 1920s. The brick building in the foreground is the hoist/power house. Also shown, on the extreme right, is a repair shop. The smokestacks belong to the boiler house, which is hidden from view (Westville Historical Society).



Figure 19. This photograph is neither labeled or dated, but is believed to be of the Bunsenville Mine post-1927. The man pictured in the upper right is Tom Moses, who became general superintendent of the U. S. Fuel Company in 1927. This image provides an excellent view of the east side of the tippie, and also shows a portion of the boiler house and water tower at the mine . The trestle shown on the left of the photograph is ascending the gob pile and was used to haul away waste brought up from the mine. Note the two different types of coal cars; on the far right is an older type of low-sided coal car, while to the left is a line of more modern cars with high sides and tapered bases, which could be unloaded from below (Westville Historical Museum).

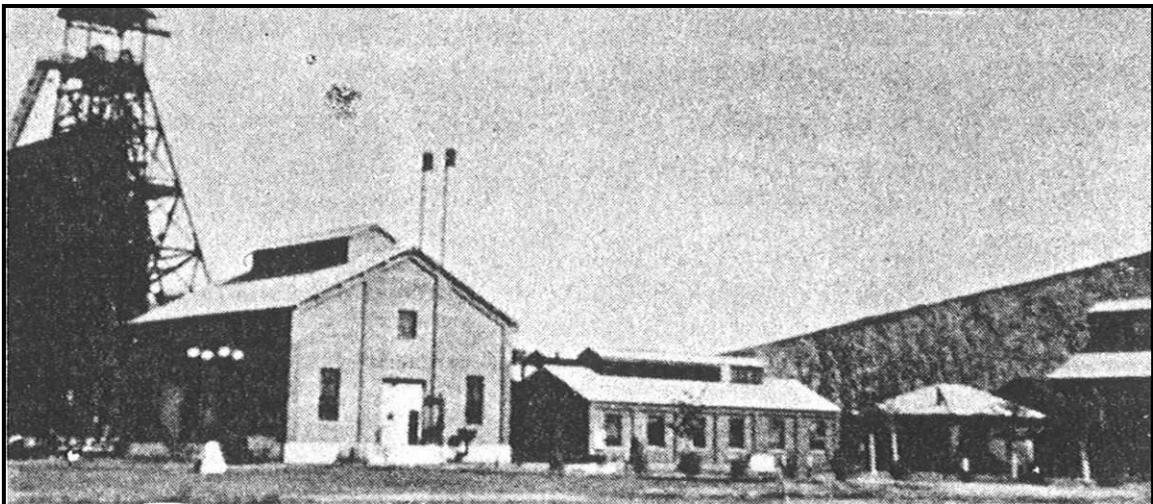
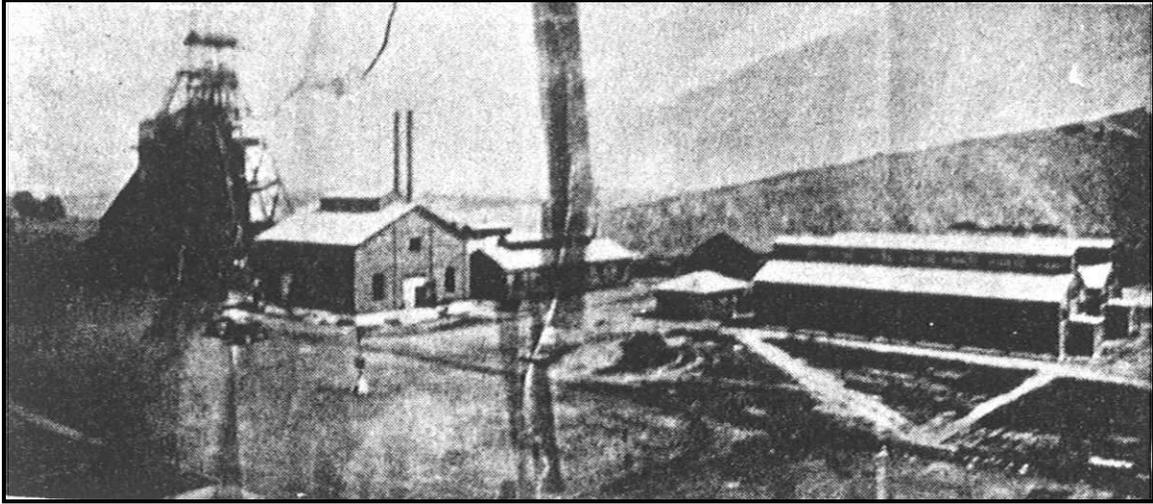


Figure 20. Two views of the Bunsenville Mine, looking northeast. The top photograph, which probably was taken from the water tower, shows (moving from left to right) the tibble, hoist/power house, blacksmith and repair shops, check house, car repair shop, and bathhouse. The bottom image shows the same area, but from ground level. Both show the gob pile looming over the mine (Starl and Bornw 1977:237).

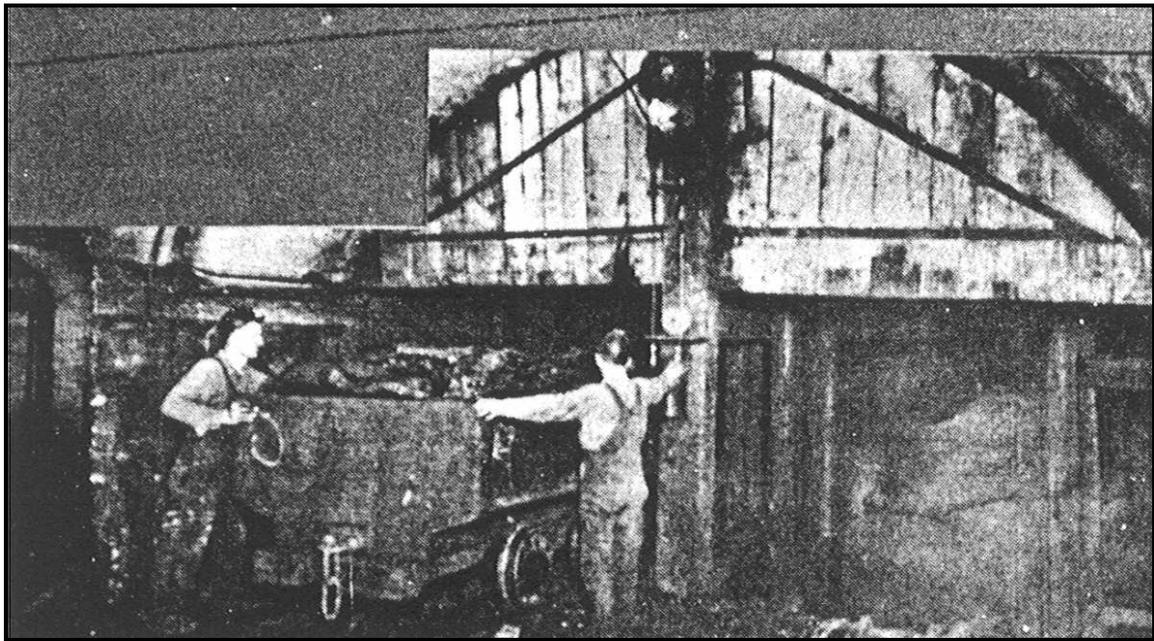
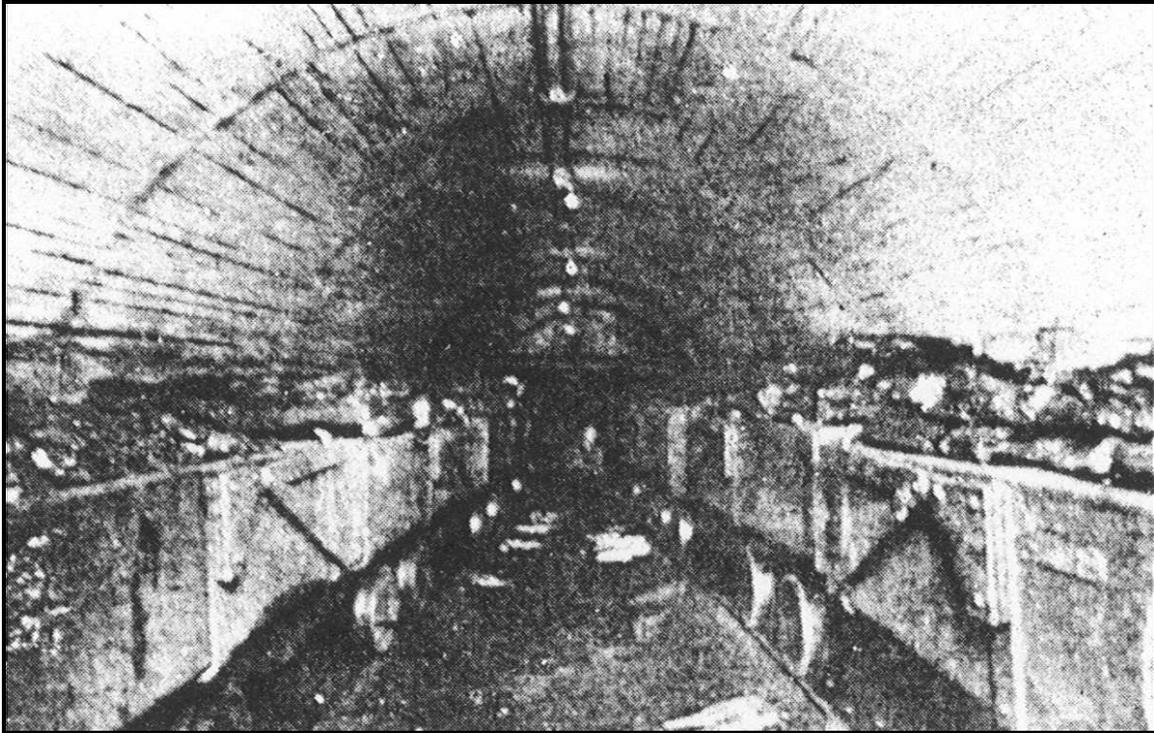


Figure 21. Two photographs showing mining activity at Bunsenville in 1936. (TOP) Loaded coal cars awaiting shipment to the surface. (BOTTOM) A coal car being moved into the cage at the bottom of the shaft (Stark and Brown 1977:239).

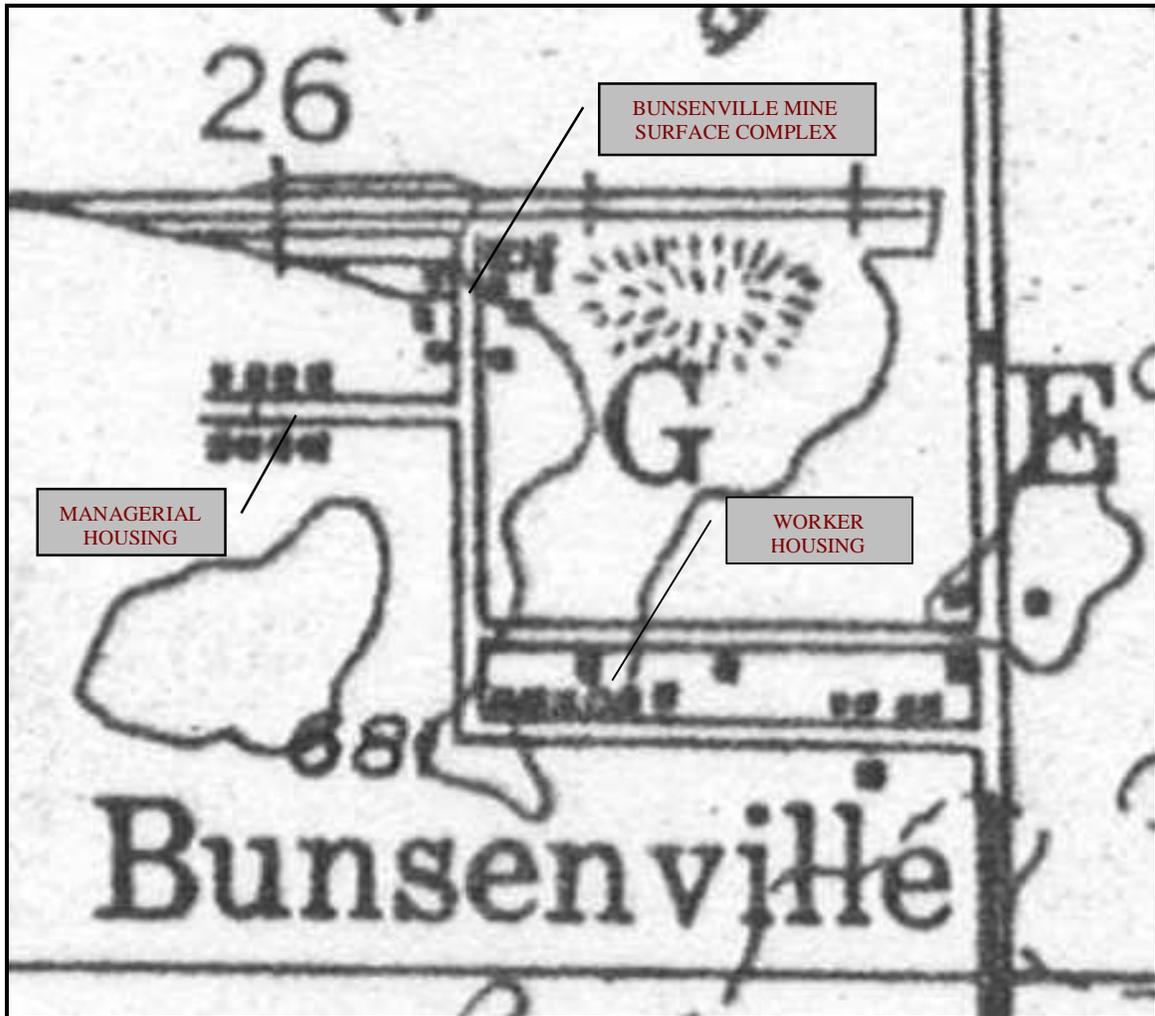


Figure 22. United States Geological Survey Map showing the Bunsenville area in 1947. The managerial housing, mine site, and workers' housing are indicated (USGS Georgetown Quadrangle 1947).



Figure 23. Photograph of the Vermilion Mine during the course of its dismantlement in 1942. Vermilion Mine was U. S. Fuel's largest producer in Vermilion County, until Bunsenville surpassed it in 1924-1925. The mine was closed in 1932, during the depths of the Great Depression. It was one of several shipping mines shut down in the county during this period. The buildings at the Vermilion Mine were similar to those at Bunsenville, in respect to their design and type of construction. The mine originally had a frame tibble but this eventually was replaced with one built of steel (Westville Historical Museum).



Figure 24. The tippel at the Vermilion Mine being dismantled in 1942. This photograph provides a good illustration of the manner of construction of a steel tippel. The brick building shown in the foreground is the mine check house, which is similar in size and design to the one at Bunsenville (Westville Historical Museum).



Figure 25. Miners receiving their last paycheck at the Bunsenville Mine, in April 1947 (Stark and Brown 1977239).

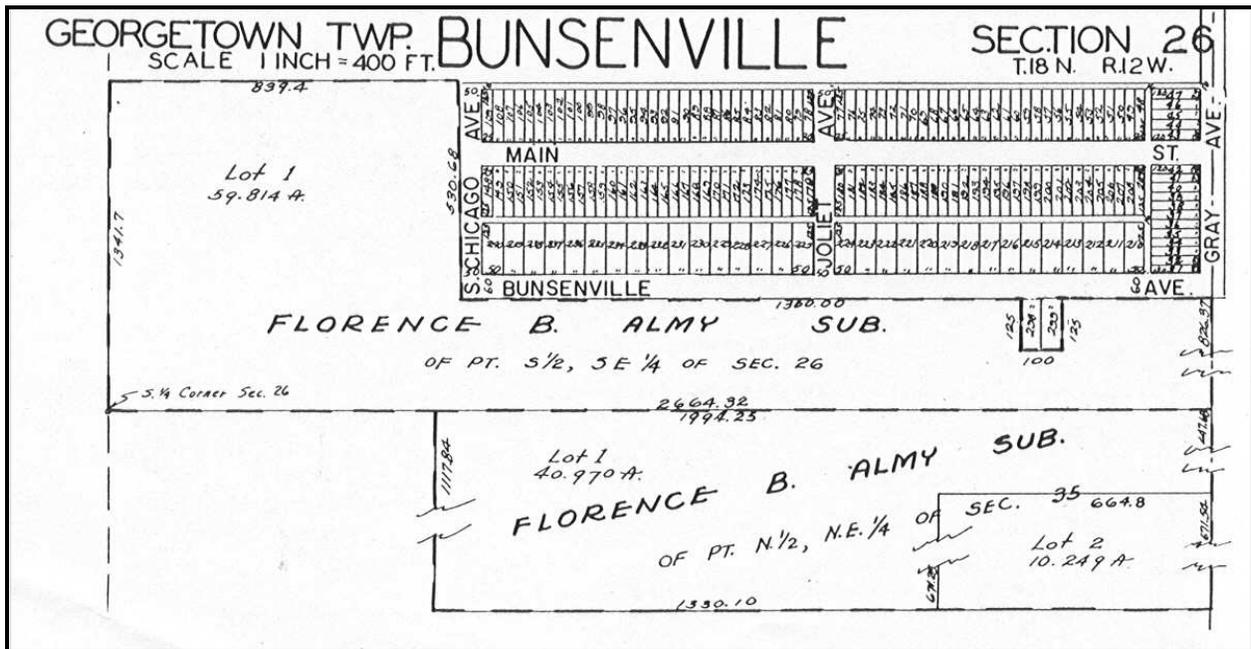


Figure 26. Plat of Bunsenville, after a large section was vacated it in 1942 (Sidwell Studio 1966:237a)

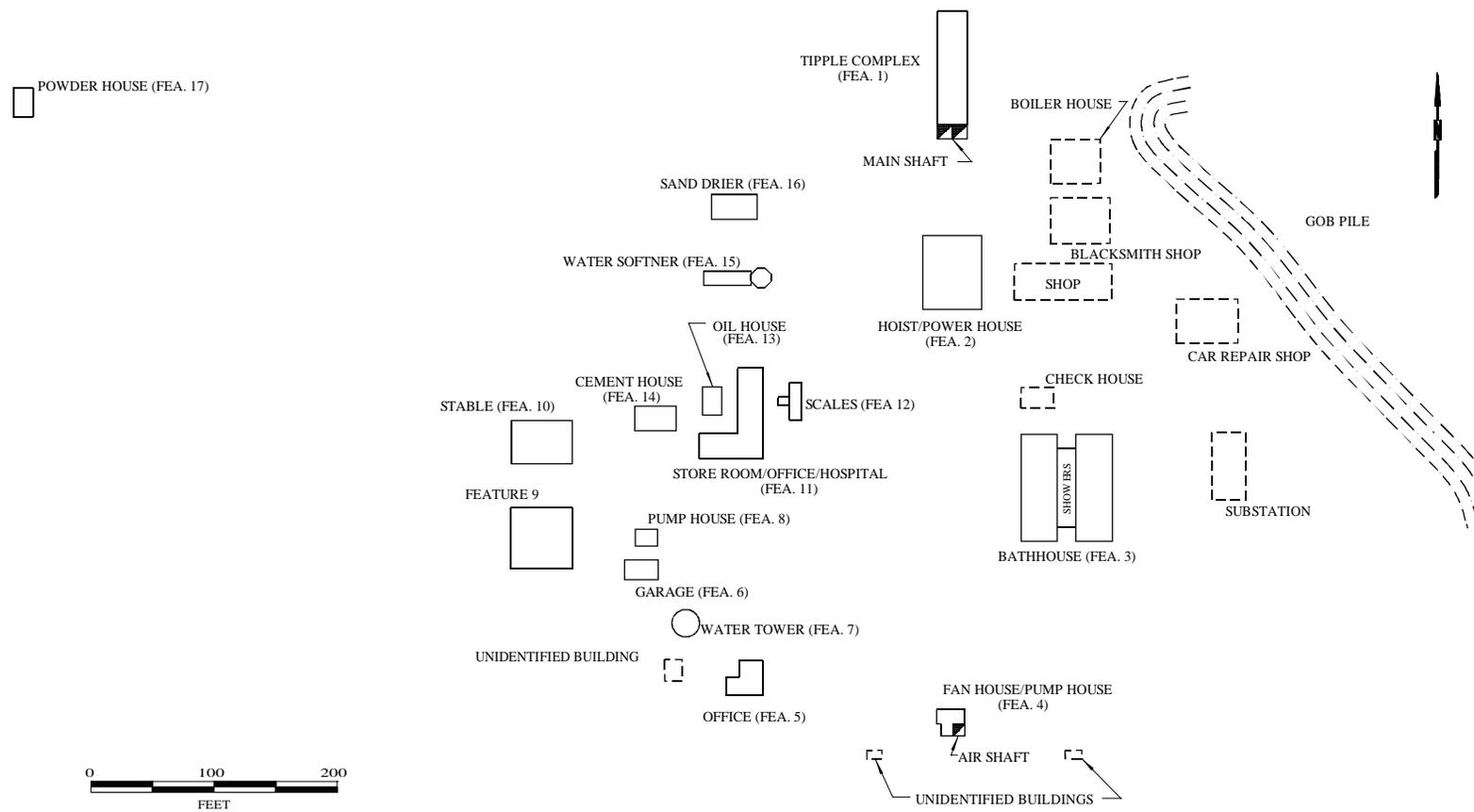


Figure 27. Site plan of the Bunsenville Mine, showing the locations of the features identified during the survey. Dashed lines indicate buildings not recorded in the survey, due to absent or limited surface remains. This figure is based off the 1947 map of the mine (DMM 1947b), used in conjunction with data gathered during the field investigation.



Figure 28. (TOP) View of the hoist shaft foundations, looking southwest. (BOTTOM) One of the footings of the mine tippie, illustrating their two-piece construction (FRR March 2002).



Figure 29. Another tipple footing. Note the manner in which the steel is encased in concrete (FRR March 2002).

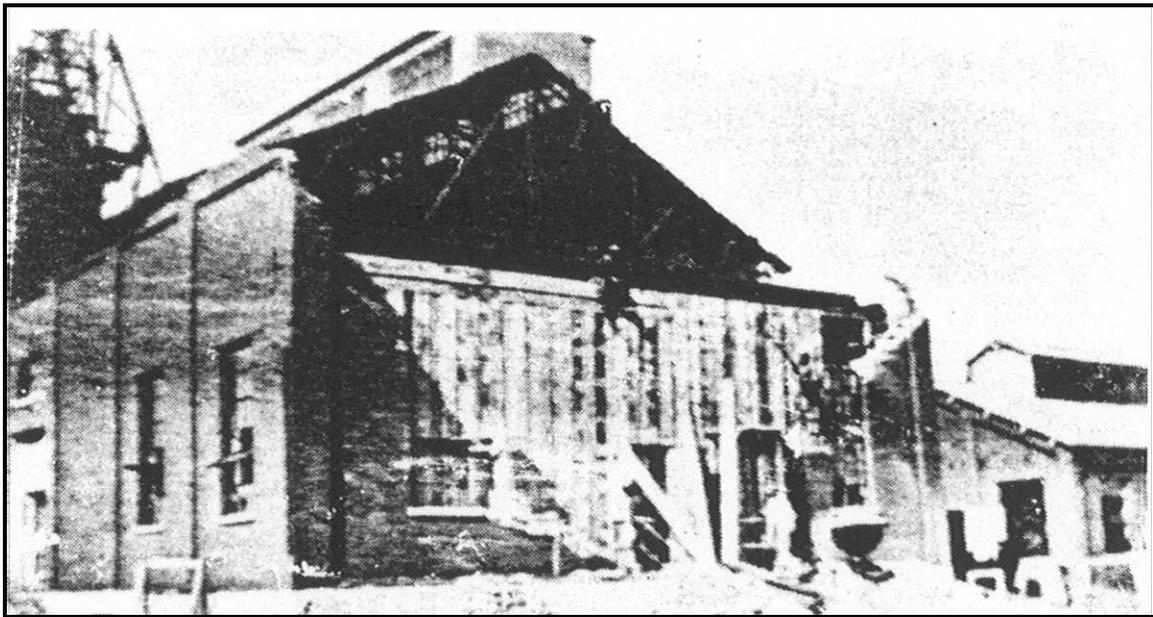


Figure 30. Historic photographs of the hoist/engine house (Feature 1) at the Bunsenville mine. (TOP) Ca. 1920s photograph showing the building during the mine's early years of operation (Westville Historical Museum). (BOTTOM) Damage caused to the building after a tornado hit, causing the south wall to collapsed (Stark and Brown 1977:238).



Figure 31. (TOP) Representative examples of the brick with which the walls of the hoist/power house (Feature 2) were constructed. (BOTTOM) Feature 2, looking northeast and showing southern half of the building, which served as an electrical substation. The bulkhead in the foreground allows access to the basement of the building. (FRR March 2002).



Figure 32. (TOP) Floor in the substation room, showing porcelain insulators embedded in the floor, presumably for electrical wiring. (BOTTOM) Piece of equipment lying north of the hoist/power house, possibly from a dynamo or the hoist engine (FRR March 2002).

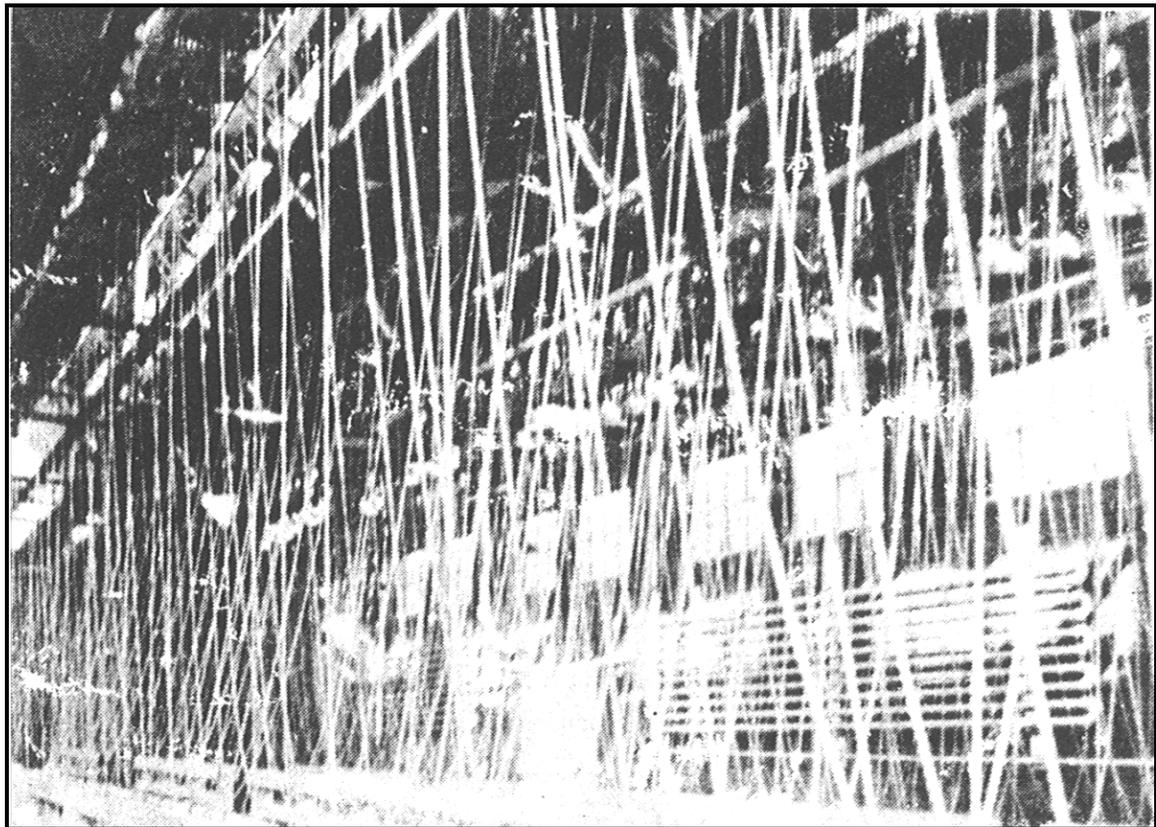
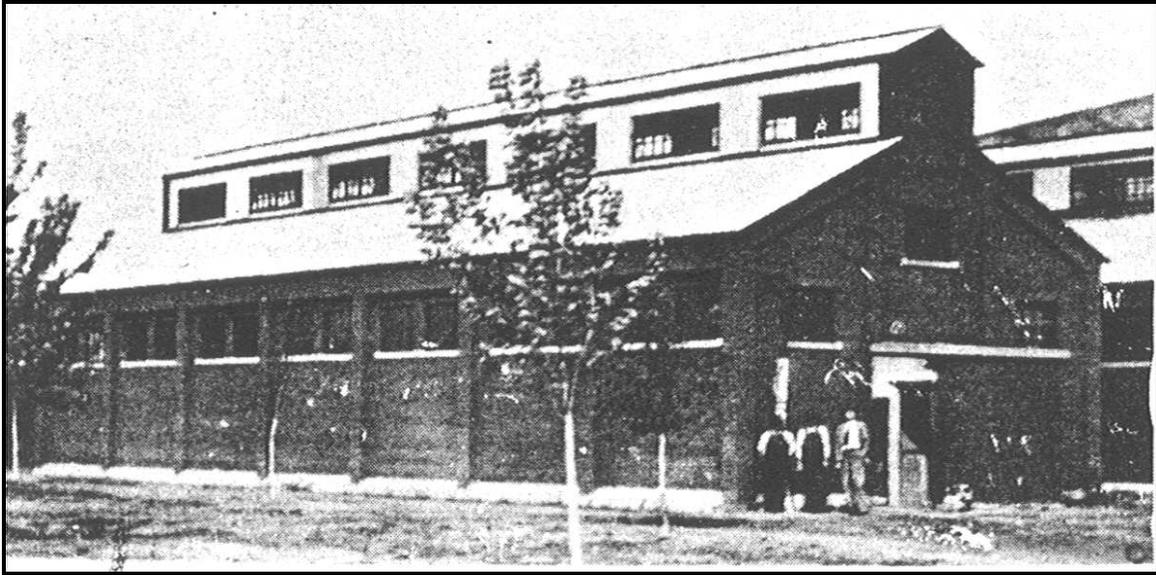


Figure 33. (TOP) Undated view of the west wing of the bathhouse (Feature 3) at Bunsenville, looking northeast. (BOTTOM) Interior of the bathhouse, showing the bucket-and-pulley system men used to hang their clothes and equipment from. Each miner was provided with a bucket in which they stored soap, lamps, and other items. Clothes were hung from hooks at the bottom of the bucket (Stark and Brown 1977:238).



Figure 34. (TOP) The remains of the fan house (Feature 4), looking southwest. Note the stairway leading to the raised engine room section of the building. (BOTTOM) The fan house, looking northeast. The fan room is located nearly at grade (FRR March 2002).



Figure 35. The walls of the engine room section of the fan house were constructed with reinforced concrete. Though very utilitarian in function, the building did have some aesthetic touches, including a concrete watertable (shown above) and pilasters. The pilasters were strengthened with 1" re-bar (FFR March 2002).

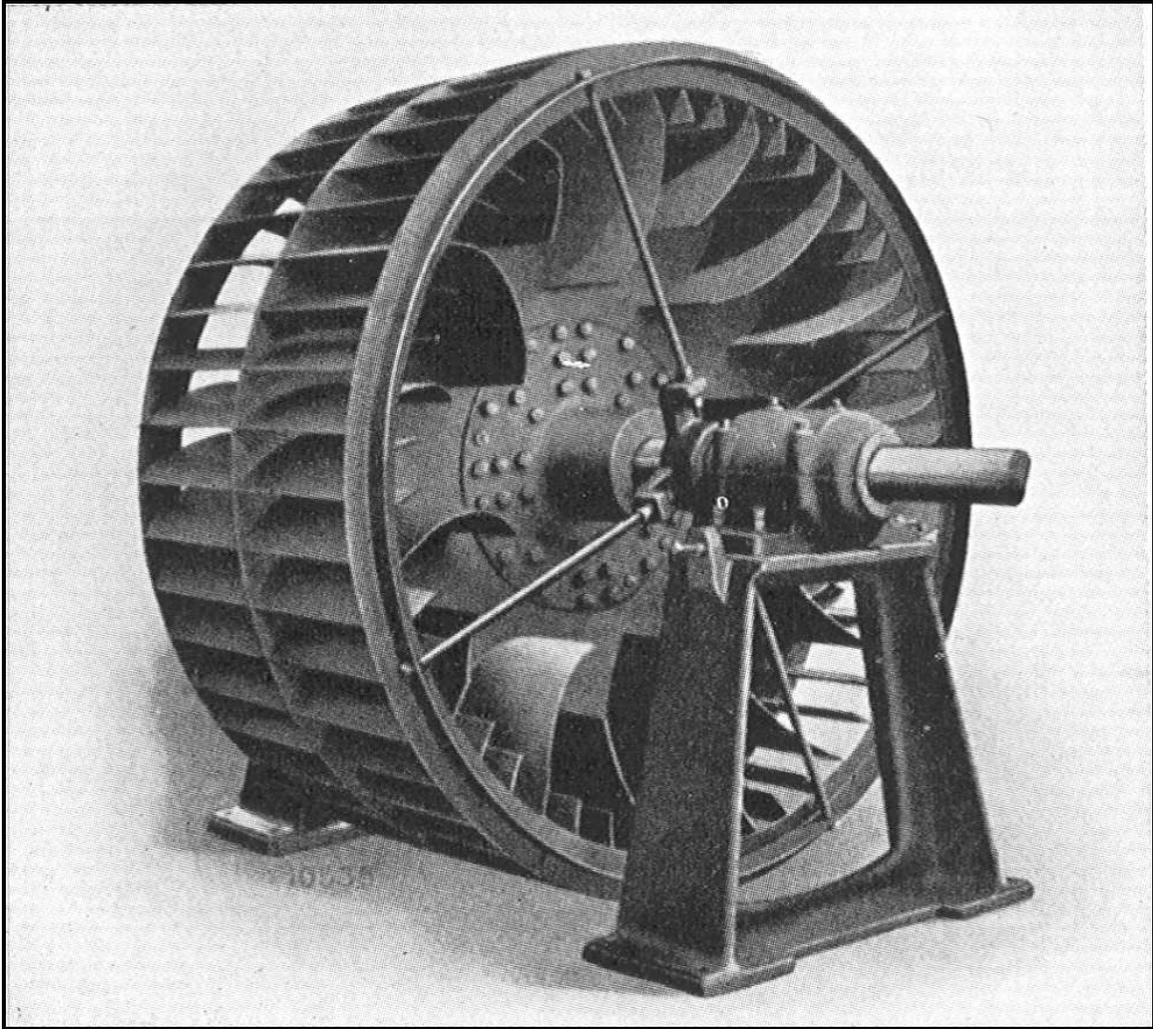


Figure 36. A Jeffrey double inlet stepped multi-bladed fan (Cartlidge 1933:50). Coal reports indicate that a similar fan, of the same make, was in use at the Bunsenville Mine.

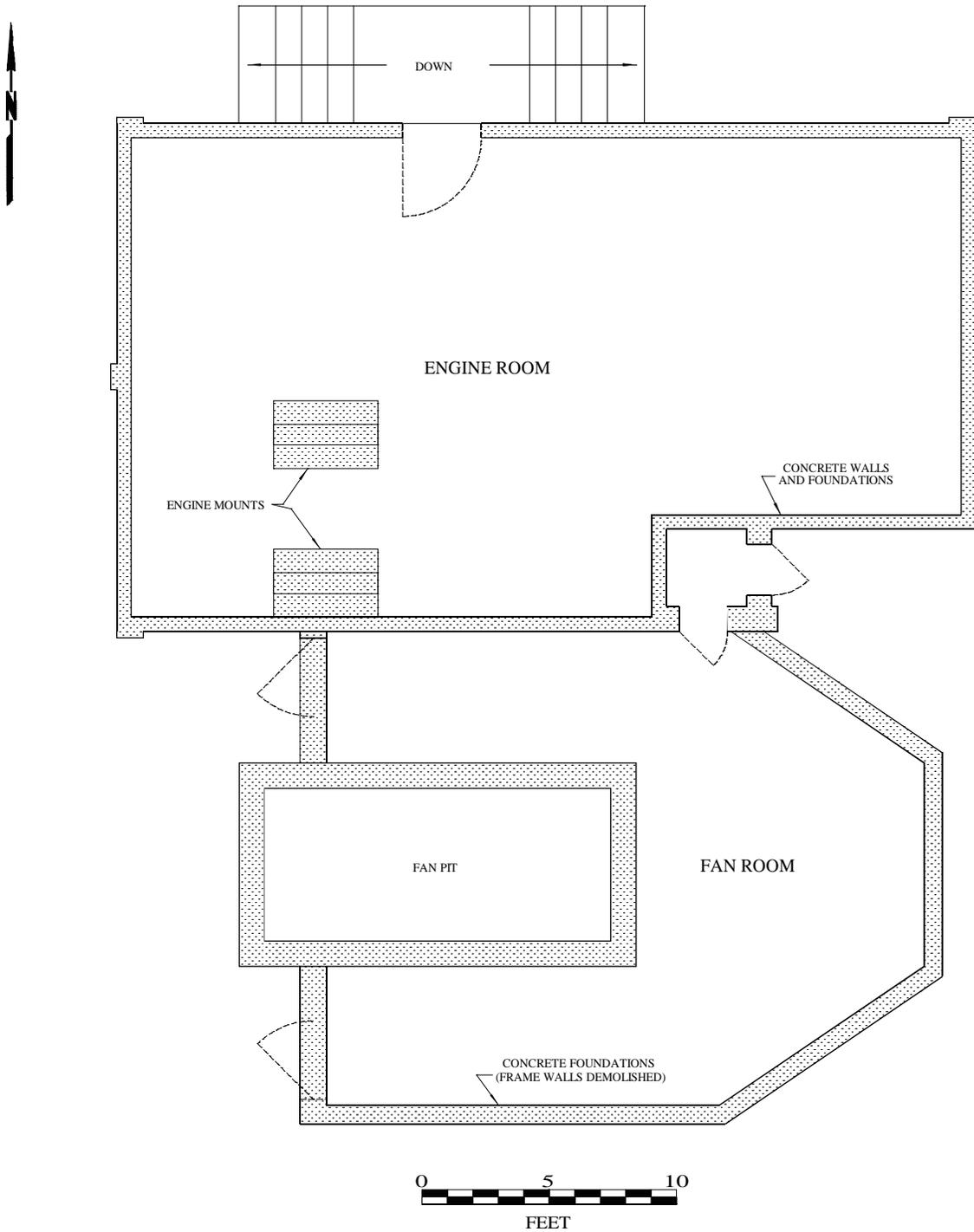


Figure 37. (TOP) Plan of the fan house (Fea. 4), showing existing conditions (FRR 2002).

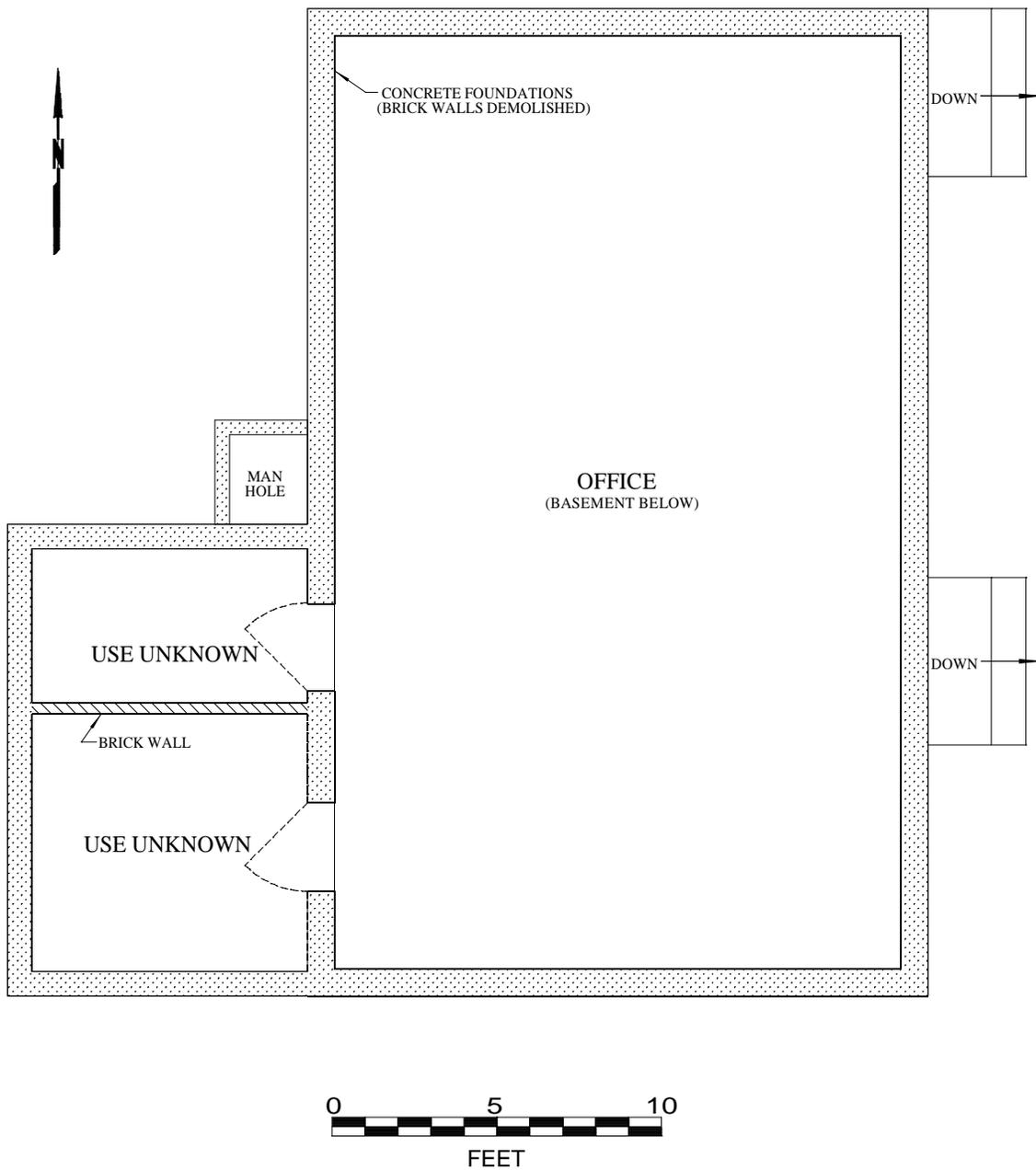


Figure 38. Plan view of the office building (Feature 5) at the mine site, showing existing conditions (FRR 2002).



Figure 39. (TOP) View of the remains of the mine office (Feature 5), looking southwest. When the building was demolished, the bricks from its walls were pushed into the basement. (BOTTOM) View of the foundations for the steel-sided, frame garage (Feature 6) at the site (FRR February 2002).



Figure 40. Two views of the foundations associated with the steel water tower (Feature 7) at the mine site (FRR February 2002).



Figure 41. (TOP) The pump house (Feature 8), looking southeast. (BOTTOM) Interior of the pump house, showing the concrete pump mounting and the passageways for pipes beneath the floor (FRR February 2002).

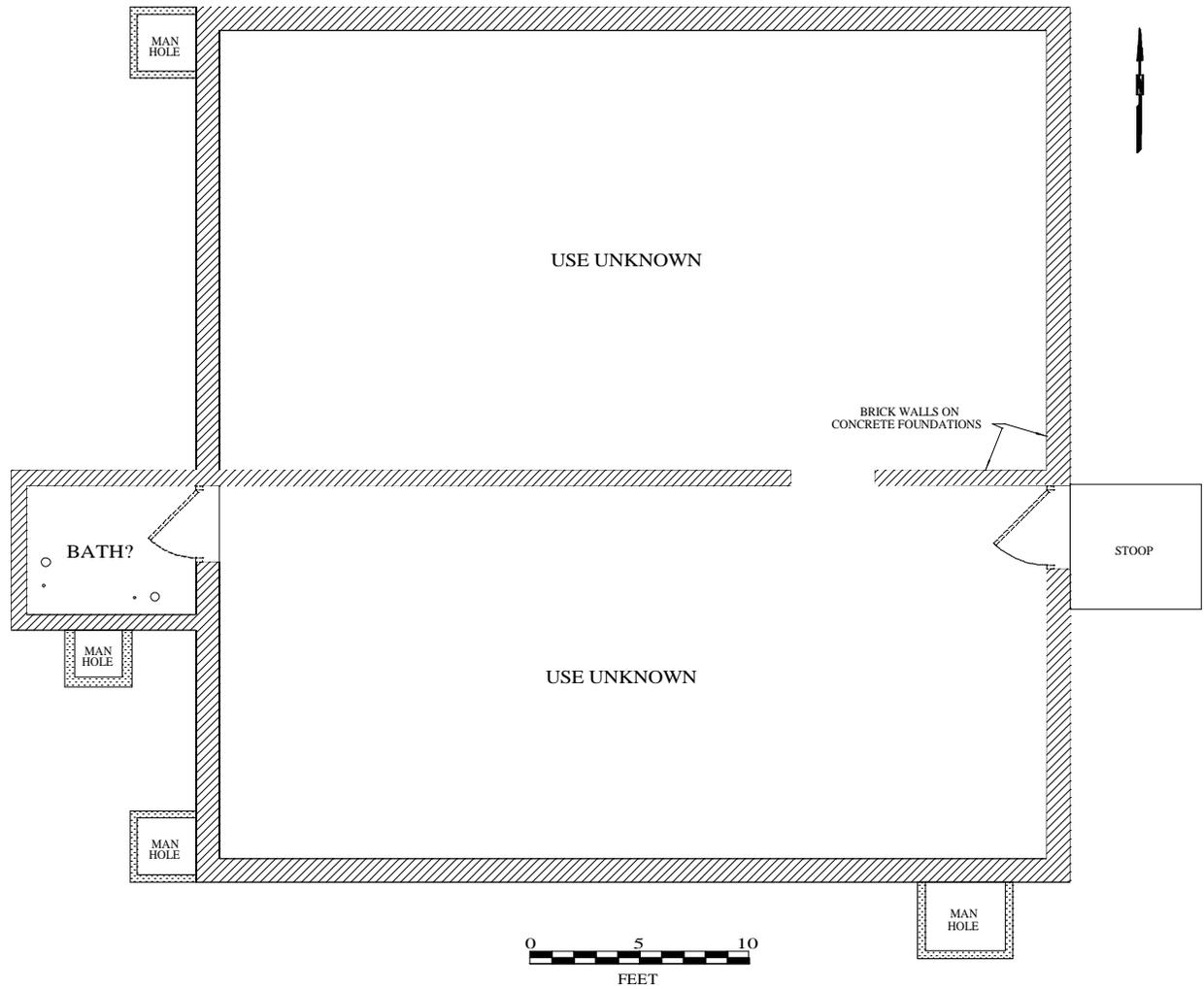


Figure 42. Floor plan of Feature 9, a large brick building located on the western edge of the site. The function of this building has not been determined (FRR 2002).



Figure 43. Even though Feature 9 was demolished down to its foundations, the building remains still contained evidence of the door openings and interior partition walls. The top photograph shows a threshold at one of the exterior entrances to the building. Note also the exterior brick wall. The lower photograph illustrates an interior doorway location (FRR February 2002).

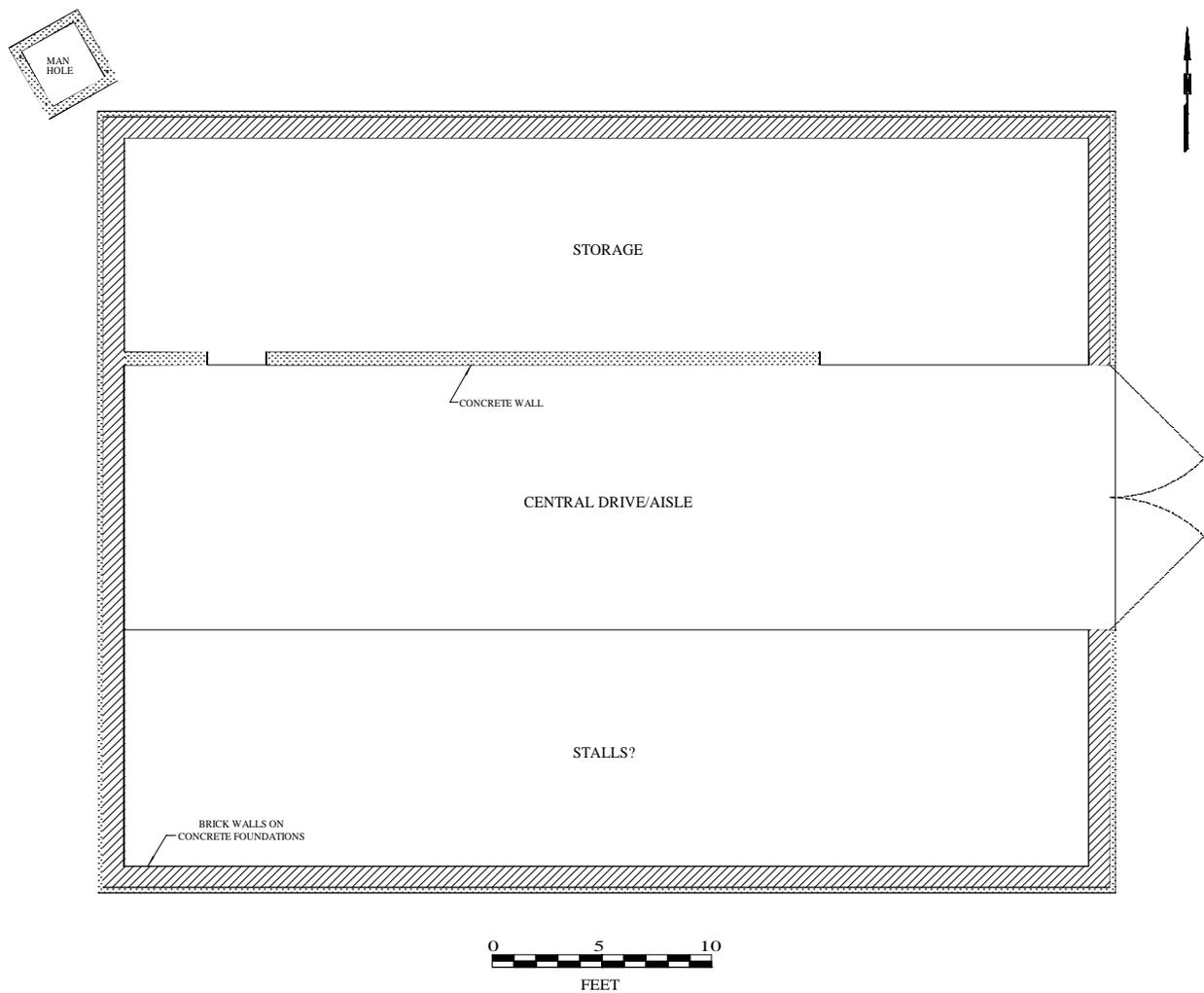


Figure 44. Floor plan of the stable (Feature 10) at the mine. Used to shelter mules, the stable was brick and was divided on its interior into three aisles (FRR February 2002).



Figure 45. (TOP) Southwest corner of the stable (Feature 10), illustrating the character of construction. The barn had brick walls, concrete foundations, and a concrete floor (FRR February 2002). (BOTTOM) View of the concrete pad once occupied by Feature 11, a multi-purpose building which served as a store room, office, and hospital. This photograph looks northeast, from the southwest corner of the frame wing that was added to the building (FRR March 2002).

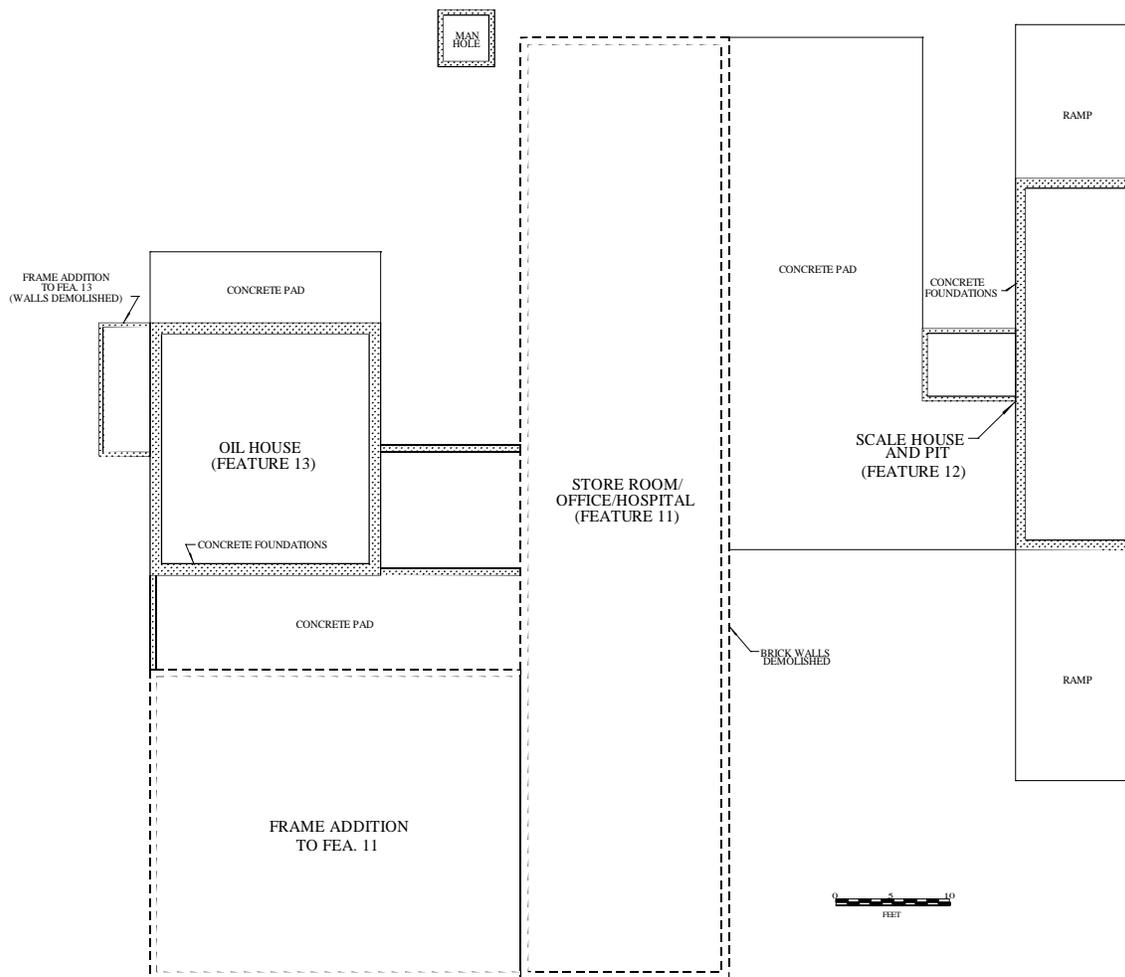


Figure 46. Plan illustrating the remains of Features 11, 12, and 13 (FRR 2002).



Figure 47. Two views of the water softener (Feature 15) foundations. The lower photograph shows the octagonal-shaped chamber located at the eastern end of the feature (FRR February 2002).

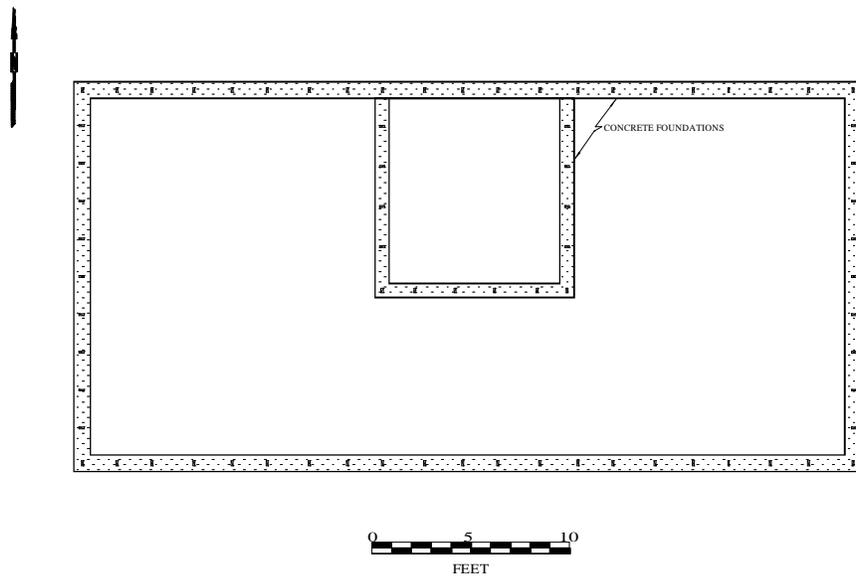
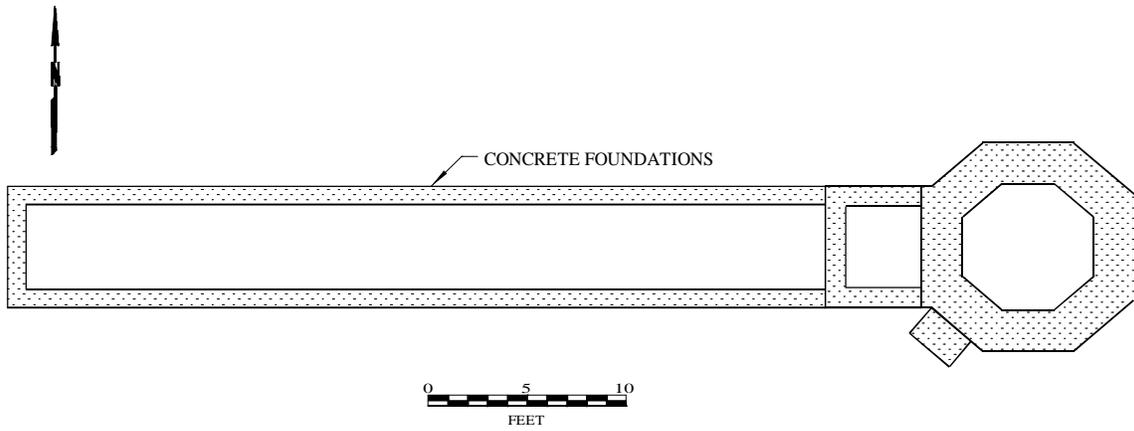


Figure 48. (TOP) Plan view of the water softener (Feature 15). (BOTTOM) Plan of the sand drier building (Feature 16) (FRR 2002).



Figure 49. (TOP) The remains of the powder house (Feature 17), looking northeast. The building has been demolished in upon itself. (BOTTOM) Corner of the powder house, illustrating the materials use in its construction. The walls and roof of the structure were built with reinforced concrete (FRR February 2002).



Figure 50. (TOP) One of the doors of the powder house still lies amongst the demolition debris. The door was framed with wood but was covered with steel plating. (BOTTOM) When the powder house was demolished, the south wall collapsed as a nearly complete unit, allowing for a reconstruction of the building's profile. Note the door opening centered in the wall. The thick beam of concrete lying on top of the wall served as a central support for the gable roof of the powder house (FRR February 2002).

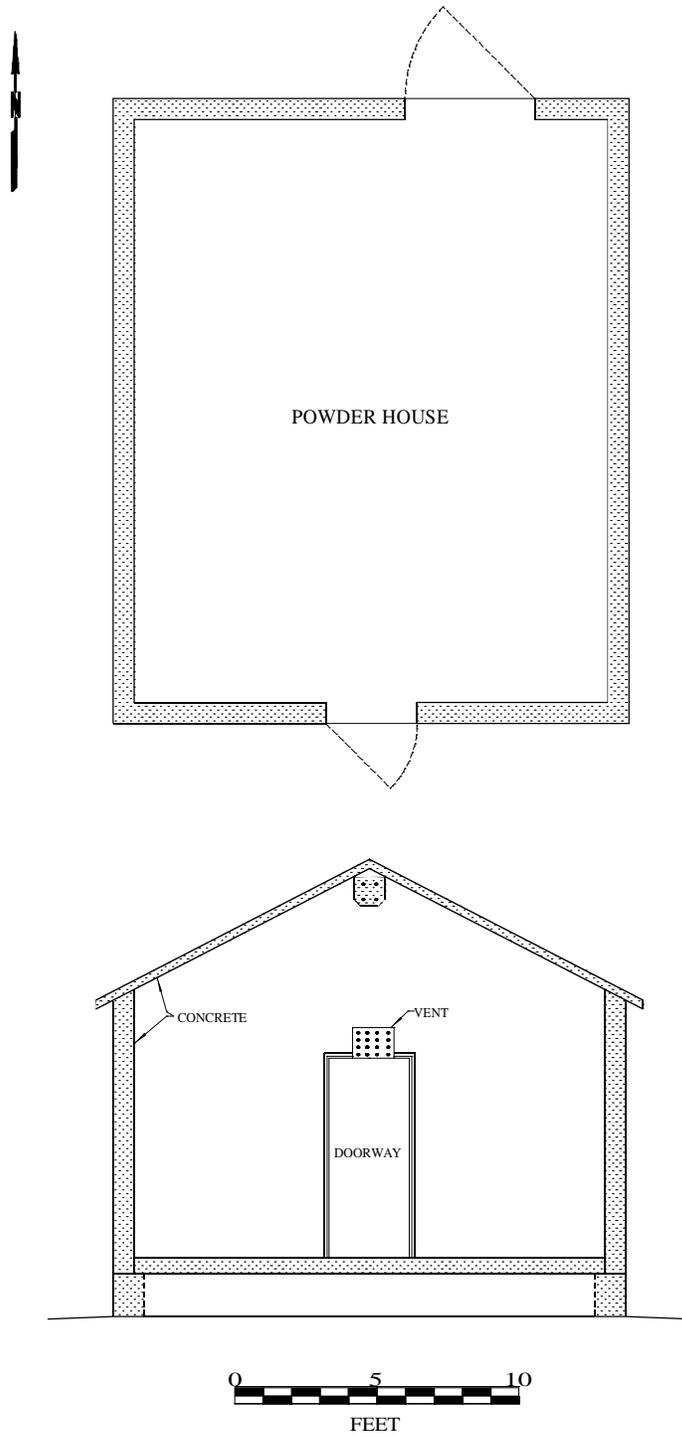


Figure 51. Plan and sectional views of the powder house (FRR 2002).



Figure 52. The Bunsenville Mine utilized steam-generated heat and electricity, and the buildings there were connected by a network of steam and water pipes. Several valve houses, such as the ones pictured above, are present at the site, but have not been assigned feature numbers.



Figure 53. The large gob pile, which looms over the town of Bunsenville, represents the most significant—and certainly most impressive—landscape feature associated with the mine (FRR February 2002).

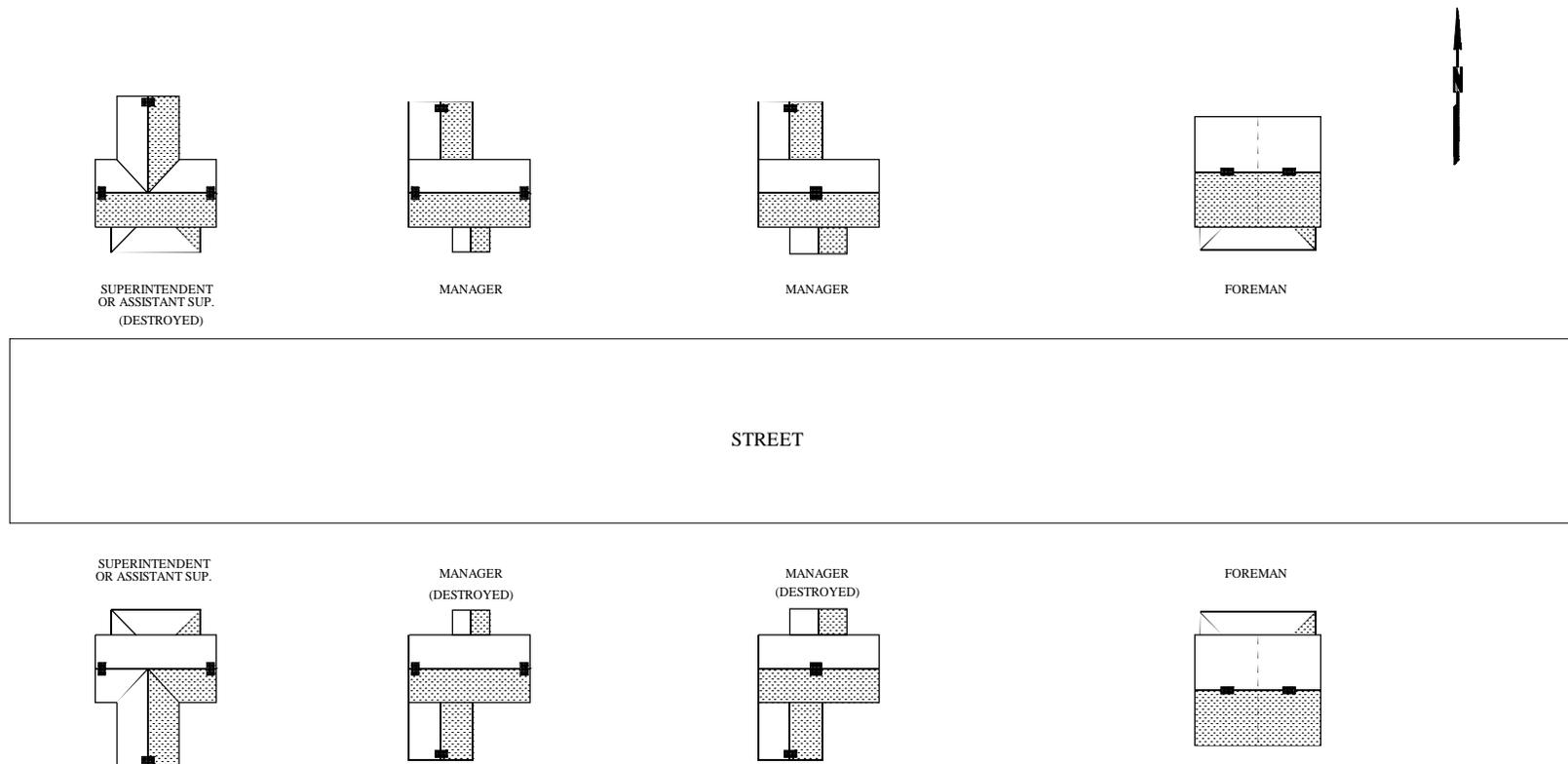


Figure 54. Site plan of the company housing associated with the coal mine. The figure illustrates the houses as originally constructed and does not show modern additions. Non-extant dwellings are indicated as being destroyed (FRR 2002).



Figure 55. Streetscapes of the residential development constructed for the managerial staff employed at the Bunsenville Mine. The top photograph shows the north side of the street, while the lower view shows the south side (FRR February 2002).

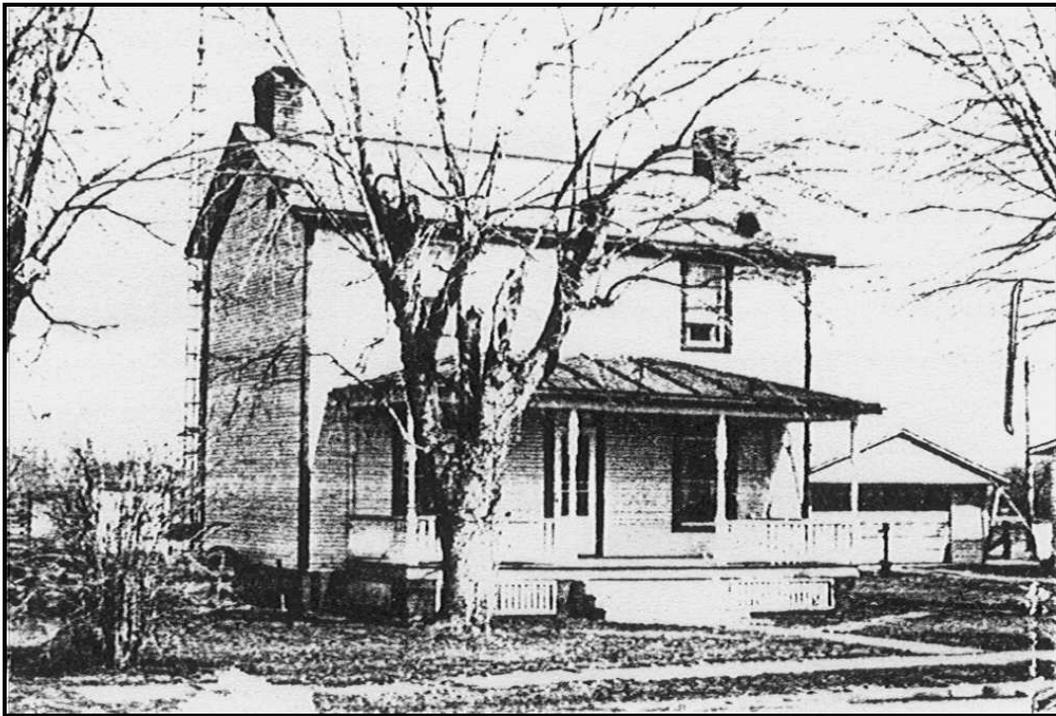


Figure 56. Photographs of the two residences originally occupied by the superintendent and assistant superintendent at the mine. The lower dwelling is no longer extant. The original photo was taken ca. 1970 and is on file at the Vermilion County Assessor's office.



Figure 57. Surviving examples of the two house types occupied by the mine managers (FRR February 2002).



Figure 58. Both of the double-houses in the housing development have survived. These were reserved for mine foremen and their families (FRR 2002).



Figure 59. Two examples of gabled cottages in Bunsenville proper. These residences represent the most diminutive of housing type in town dating from the period that the mine was in operation (FRR February 2002).



Figure 60. Two pyramidal-hip cottages in Bunsenville (FRR February 2002).



Figure 61. (TOP) A vernacular hip-roofed Bungalow in Bunsenville. Possibly constructed in the 1920s, this residence is one of the larger homes in the community. (BOTTOM) The lone house located on the south side of Bunsenville Avenue. This dwelling originally was two-stories and resembled those occupied by the mine managers. The second story was removed after a fire.

APPENDIX I
ILLINOIS ARCHAEOLOGICAL SITE RECORDING FORM
BUNSENVILLE MINE

[NOT INCLUDED IN THIS COPY]